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ALAMEDA POINT
SSIC NO. 5090.3

New World Technology

Alameda Naval Air Station

Radiological Characterization Survey of Storm Drains

Final Report

For Comment

Prepared Under Contract to:

U. S. Army Industrial Operations Command
Rock Island, Illinois

Project Number: USN 97-032

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 Introduction.....	1
2.0 Site History.....	1
3.0 Scope Of Work.....	1
4.0 Survey Procedures.....	2
4.1 General.....	2
4.2 Calculation of Results.....	3
4.3 Background Surveys.....	7
4.4 Survey Technique.....	8
4.5 Sampling.....	9
5.0 Survey Results Summary.....	9
5.1 Manhole 1 to Manhole 6	9
5.2 Manhole 6 to Manhole 2A	9
5.3 Manhole 2A to Manhole 2B	9
5.4 Manhole 2B to Manhole 2C	9
5.5 Manhole 7 to Manhole 9	10
5.6 Manhole 3F to Manhole 3F-1	10
5.7 Manhole 3F to Manhole 3F-5	10
5.8 Manhole F to Manhole 2F	10
5.9 Manhole 2F to Manhole 3F	10
5.10 Manhole 4F to Manhole 4F-1	10
5.11 Manhole 4F-1 to Manhole 4F-2	10
5.12 Manhole 4F-2 to Manhole 4F-3	10
5.13 Manhole 5F to Manhole 5F-1	11
5.14 Manhole 5F-1 to Manhole 5F-2	11
5.15 Manhole 5F-2 to Manhole 5F-3	11
5.16 Manhole 5F-3 to Manhole 5F-4	11
5.17 Manhole 6F-5 to Manhole 6F-3	11
5.18 Manhole 6F-3 to Manhole 6F-5	11
5.19 Manhole 6F-1 to Manhole 6F	11
5.20 Manhole 6F-1 to Manhole 6F-2	12
5.21 Manhole 6F-1 Abandoned Line to Inside Building 5	12
5.22 Manhole 6F-2 to Inside Building 5	12
5.23 Manhole 400SS-1 to Manhole 400SS-2	12
5.24 Manhole 4F to Manhole 2C.....	12
5.25 Drain Line from Small Parts Shop in Building 5 Leading to Manhole 6F-2	12
5.26 Sample Results.....	12

Appendix A Characterization of Drain Lines

Appendix B Analytical Results for Outfalls

Appendix C Analytical Results for Manholes

1.0 Introduction

This report presents the findings of the radiation characterization survey performed by New World Technology (NWT) personnel under contract USN 97-032. The survey was performed between December 17th and December 22nd, 1997 at NAS Alameda. The survey included exposed and subterranean interior drain lines of Building 5. Also, storm drains from Buildings 5 and 400 and other locations emptying to the Seaplane Lagoon were surveyed for radioactive contamination. The work was performed with the assistance of Mr. Roger Caswell, Environmental Compliance Manager at Alameda Point, who identified site survey locations to NWT personnel.

2.0 Site History

Building 5 and several rooms in Building 400 at NAS Alameda are areas of known or suspected radioactive contamination. Radium was processed and radio-luminescent paints were stored or used in some or all of these areas. Elevated levels of radium-226 contamination have been confirmed in some drain lines, and were suspected to be present in others. At the time of the radium use, the drain lines in Building 5 were connected directly to the storm sewer drainage system that empties into the seaplane lagoon. In addition to the storm drains building 400 drains are also connected to the sanitary sewer, which drains to the pumping station near the visitor gate. For the purpose of the survey it is assumed that all radioactive contamination is from Ra-226. No other radioisotopes have been identified during preliminary analysis.

3.0 Scope of Work

The scope of work performed included the radiological survey of the following:

- 1) The underground drain system in Building 5 from the manifold in the small parts shop to manhole 6F-2 outside the Building, including surveys of the accessible portion of an intersecting abandoned line.
- 2) The storm drain system from manhole 6F-5 to manhole 6F-2.
- 3) The storm drain system from manhole 5F-4 to manhole 5F.
- 4) The storm drain system from manhole 4F-3 to manhole 4F.
- 5) The storm drain system from manhole 3F to out fall F.
- 6) The storm drain system from manhole A to manhole 4F.

- 7) The storm drain system from manhole 3F-5 to manhole 3F-1.
- 8) The storm drain system from manhole 1 to manhole 4F.
- 9) The storm drain system from manhole 7 to manhole 9.
- 10) A section of a radiologically uncontaminated storm drain line similar to the sections leading to outfall F, to serve as a determinant for a background baseline value.
- 11) The sanitary drain system from Building 400 out one manhole past the exit from the building.
- 12) Obtain samples from contaminated portions of the F-line storm drain system between Building 5 and its outfall for a gross indication of the contaminants present and chemical profiling information for future disposal purposes.

4.0 Survey Procedures

4.1 General

The drain lines were generally 8-inch to 27-inch ID concrete pipes with the exception of the lines inside Building 5, which included 4-inch to 6-inch diameter iron pipes. The radiological survey was conducted using 1" x 1" and 1" x 0.5" NaI detectors with data collected on Data Loggers (Ludlum Instruments Model 2350-1). Data collected was recorded on NWT Radiation Survey Report (RSR) forms. The 1" x 1" detectors were used to survey the interior of pipes and they were also used to survey the interiors of manholes and larger diameter pipes. The 1" x 0.5" detector was used when necessary to survey the smaller diameter sections of pipe. In all cases the type of detector used is recorded on the RSR form. The detectors were rendered waterproof by encasing them in special PVC housings fabricated for this survey.

At each interval (0.5 meters) along the pipes a 60-second count was taken and the data recorded on the radiological survey form. At the beginning and end of each day a count of the background and the check source was taken for each instrument to verify proper performance. These results were recorded on the radiological survey forms and the daily performance test logs.

Attached to this report is an Alameda NAS map displaying the storm drain system. Each survey report and chart contains the following information:

1. Date and time of survey.
2. Fixed measurement counting time.
3. Detection limit in counts, nanoCuries and microCuries
4. Background activity.
5. Type of radiation measured if other than gamma radiation.
6. Activity measured in microCuries and nanoCuries.
7. Approximate distance where each measurement was taken along the pipe.

Bar graphs were generated for each section surveyed. The x-axis is numbered and corresponds to the detector location along the pipe from the point of origin in meters. To avoid possible confusion, the location section of the Radiation Survey Report form should be referenced. The y-axis is expressed in gross counts per minute.

4.2 Calculation of Results

The results of the survey data were calculated based the following criteria:

4.2.1 Instrument Detection Sensitivity

The detection sensitivity achievable via the measurement process refers to a statistically determined quantity of radioactive material which may be detected and measured (quantified) at some preselected confidence level. Because of the predominant use of 95 percent as a desired level of confidence, a 5 percent permissible level of uncertainty has been adopted by New World Technology for data associated with this project. As is widely known, the actual sensitivity achieved is dependent upon a variety of process factors and potential systematic errors. These factors include instrument electronics, environmental background, counting time, media self-absorption, and surveillance technique. For this surveillance, "detection" sensitivity followed the rigorous definition, as that level of activity above which there is no more than a 5 percent probability that a positive result is reported when there really is nothing there (Type I error) or that a negative result is reported when there really is activity present (Type II error).

Two terms very useful when describing detection sensitivity are lower limit of detection (LLD) and the minimum detectable activity (MDA). Lower detection limit is an *a priori* estimate of the performance capabilities of the instrumentation; factors related to the measurement technique or the sample medium are not involved in this estimate. The mathematical constructs, critical level and detection limit, described by Curie, Lochamy, and others, may be utilized to define a value referred to as the minimum detectable count rate (MDCR), which in turn may be employed in calculation to define an MDA for the measurement process. The more useful construct, detection limit, is predicated on the level of uncertainty chosen for a false positive (Type I) error probability, the desired confidence level regarding false negatives (Type II error probability), and the standard deviation of the background measurement. From the background measurement a preliminary detection limit can be calculated. This value can subsequently be utilized in formula to define the smallest amount of activity (MDA) that can be **reliably distinguished** from background for the process of quantitative analysis. This measurement (value) is subject to all the potential random and systematic errors which could affect the outcome. This baseline quantity of activity is reflective of the relative efficiency of the measurement technique.

The mathematical construct used for this report is:

$$MDA = K(2.71 + 4.65 S_b)$$

Where:

K = a proportionality constant relating detector response (in counts) to an activity concentration.

S_b = the standard deviation of the background count.

The NWT Radiological Survey Report (RSR) provides all of the information used in calculating the survey results.

$$MDA = \frac{2.71 + 4.65 \sqrt{B_R \times t}}{t \times E}$$

Where:

MDA = activity level in disintegrations per minute
 B_R = background rate in counts per minute
 t = counting time in minutes
 E = detector efficiency in counts per minute

Sample calculation:

B_R = 800 counts per minute
 t = 1 minute
 E = 0.020 counts per disintegration

$$MDA = \frac{2.71 + 4.65\sqrt{800 \times 1}}{1 \times 0.020} = 6712 \text{ dpm}$$

The NWT Radiological Survey Report reports the result of this calculation in nanoCuries (nCi) and microCuries (μ Ci). The conversions for this are:

nCi = source dpm / 2,220 dpm - nCi⁻¹

μ Ci = source dpm / 2,220,000 dpm - nCi⁻¹

Example

$MDA_{(nCi)} = 6500 \text{ dpm} / 2,220 \text{ dpm} - nCi^{-1} = 2.9 \text{ nCi}$

$MDA_{(\mu Ci)} = 6500 \text{ dpm} / 2,220,000 \text{ dpm} - \mu Ci^{-1} = 0.0029 \mu Ci$

On the basis of counting statistics alone the L_D is the minimum net sample count which is likely to be detected. The calculation for this is:

$$L_D = 2.71 + 4.65\sqrt{B_R}$$

Example:

$$L_D = 2.71 + 4.65\sqrt{800} = 134 \text{ cpm}$$

4.2.2 Instrument Efficiency

On each NWT Radiological Survey Report the data is provided that was used to determine instrument efficiencies for each survey. The detector in each case in the survey was a NaI scintillation detector. The majority of the measurements made were with the 1" x 1" detector. A few measurements were made inside the pipes in Building 5 with a 1" x .5" detector. In all cases the type and size of the detector used is recorded on the NWT Radiological Survey Report form in the "Instruments Used" boxes.

Determination of the detector efficiency was calculated using the following formula:

$$efficiency = \frac{CPM_{Source} - CPM_{bkg}}{23.1 nCi \times 2,220 / dpm \text{ per } nCi}$$

Example:

$$\begin{aligned} CPM_{source} &= 1,500 \text{ cpm} \\ CPM_{bkg} &= 800 \text{ cpm} \end{aligned}$$

$$efficiency = \frac{1500 - 800}{23.1 nCi \times 2,220 / dpm \text{ per } nCi} = 0.013$$

This calculation was used for any geometry.

The Ra-226 source used to perform detector calibration was not a point source. The source used is 4 inches in diameter, 1 ¾ inch thick. The measurement for determining the detector efficiency was taken with the detector inside its waterproof housing. The detector assembly was laid on its side directly on the calibration source, with the sensitive portion of the detector directly over the source.

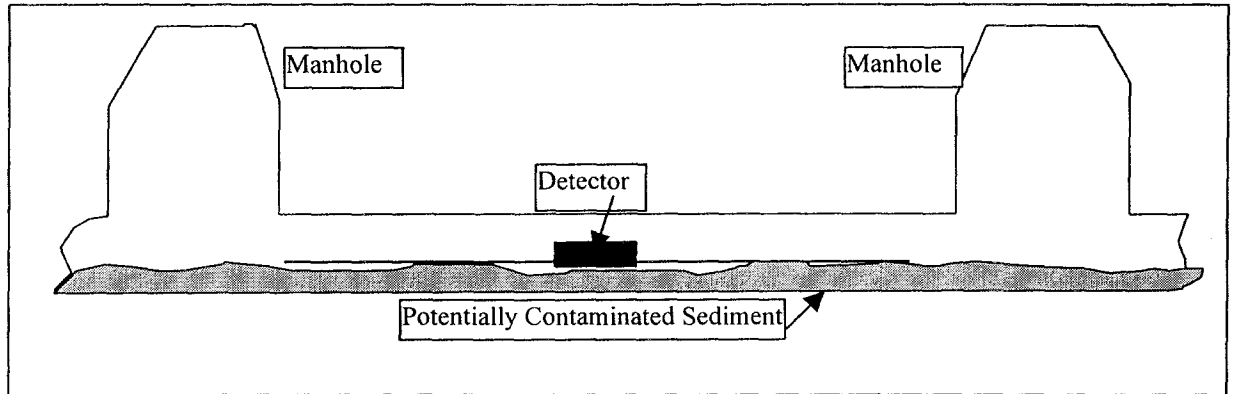
4.3 Background Surveys

Distinguishing a count as being different from background in field conditions is difficult. This is particularly so in surveying of buildings, pipes, manholes and drain lines. In Building 5, for instance, the floors walls and ceilings are fabricated from concrete, which has a large variation in background. In many of the manholes various natural materials were used in the construction of the manhole affecting background levels. As one moves the detector along pipes of interest, the background changes due to factors such as changes in the pipe diameter, and liquid levels inside of the pipe. We believe it is important not only to just consider the activity calculated, but also the shape of the various gross-count bar graph curves generated. The bar graphs and reports of calculated activity alone (net CPM) may present what appears to be an elevated count. However, when the gross count graph is reviewed and considered, it may actually be part of the natural variation in soils or construction materials.

In order to establish comparative radiation background levels for the F-line storm drains, a storm sewer line similar in construction but not connected to the F-line was chosen. This line, located northwest of Building 5, was surveyed by the same method used in surveying the other lines in question. In addition to this a twice-daily background count was performed in an uncontaminated area prior to beginning work each day and at the end of the day. The results of these surveys are attached to this report.

4.4 Survey Technique

The predominant geometry used was with the detector on its side.



The storm sewers were surveyed by first threading their length with a nylon line. The line was towed and tied between manholes on the 10th, 11th, and 12th of December. The drain lines were surveyed on December 16th, 17th, 18th, 19th, 20th, 21st, and 22nd. The waterproofed detectors with roughly 200 feet of cable each were pulled through at 0.5 meter intervals. At each interval a one-minute count was taken and recorded on the radiological survey report forms.

The abandoned line leading to Building 5 from manhole 6F-1 was surveyed by pushing the detector as far as possible through the line with 1/2" PVC pipe.

Some sections of the designated lines could not be completely surveyed due to accessibility problems. Attempts were made to thread a line from the eastern - most drain clean out inside Building 5, nearest the small parts shop valve manifold to manhole 6F- (~500' from manhole 6F-2) which were unsuccessful. A line was threaded from the western most drain cleanout to manhole 6F-2, which was a distance of approximately 170'. Surveys of the rest of the line were conducted at the drain cleanouts and the valve manifold inside the small parts shop by inserting the 1" x 0.5" NaI detector into the cleanouts as far as possible. In the case of the valve manifold in the small parts shop, readings were obtained through the open end of the pipe and a cleanout. The readings were recorded on radiological survey report forms and are included in Appendix A.

4.5 Sampling

Samples were obtained of sediment/sludge and manhole/pipe construction material inside the following manholes for determining the presence of radioactive contaminants and waste profiling:

6F, 6F-1 and 6F-2

In addition, samples were taken at the following locations for determining the presence of radioactive contaminants:

Outfall-F and a background location across the Seaplane Lagoon east of outfall-F near outfall-G.

The samples were analyzed by gamma spectroscopy for determination of the levels of radioactive material present.

All samples were obtained on December 21st.

5.0 Survey Results and Findings

The following is a summary of the surveys performed:

5.1 Manhole 1 to Manhole 6 ~220'

No activities above detection limits were found in this pipe run.

5.2 Manhole 6 to Manhole 2A ~65'

No activities above detection limits were found in this pipe run.

5.3 Manhole 2A to Manhole 2B ~50'

No activities above detection limits were found in this pipe run.

5.4 Manhole 2B to Manhole 2C ~60'

No activities above detection limits were found in this pipe run.

5.5 Manhole 7 to Manhole 9 ~200'

No activities above detection limits were found in this pipe run.

5.6 Manhole 3F to Manhole 3F-1 ~ 200'

Activities ranging from 4 nCi to ~ 9,000 nCi were found in this pipe run with activity dropping off to background levels ~ 30' from Manhole 3F-1.

5.7 Manhole 3F to Manhole 3F-5 ~ 310'

Activities ranging from 4 nCi to ~ 32 nCi were found along the entire pipe run with levels dropping off towards Manhole 3F-5.

5.8 Manhole F to Manhole 2F ~ 400'

Activities ranging from 7 nCi to ~ 1250 nCi were found along the entire pipe run.

5.9 Manhole 2F to Manhole 3F ~ 430'

Activities ranging from 5 nCi to ~ 1,800 nCi were found along the entire pipe run.

5.10 Manhole 4F to Manhole 4F-1 ~ 220'

Activities ranging from 4 nCi to 15 nCi were found at random locations in the pipe run, with the majority of readings below detection limits.

5.11 Manhole 4F-1 to Manhole 4F-2 ~ 275'

Activities ranging from 5 nCi to ~ 60 nCi were found along the entire pipe run.

5.12 Manhole 4F-2 to Manhole 4F-3 ~312'

Activities ranging from 4 nCi to ~ 40 nCi were found at random locations in the pipe run, with the majority of readings below detection limits.

5.13 Manhole 5F to Manhole 5F-1 ~ 440'

Activities ranging from 4 nCi to ~ 540 nCi were found along the entire pipe run, with the higher activity readings found towards Manhole 5F.

5.14 Manhole 5F-1 to Manhole 5F-2 ~405'

Activities ranging from 4 nCi to ~ 20 nCi were found along the entire pipe run.

5.15 Manhole 5F-2 to Manhole 5F-3 ~ 430'

Activities ranging from 4 nCi to ~ 35 nCi were found at random locations throughout the pipe run, with a number of readings below the detection limit.

5.16 Manhole 5F-3 to Manhole 5F-4 ~230'

Activities ranging from 5 nCi to ~ 20 nCi were found distributed throughout the entire pipe run.

5.17 Manhole 6F-5 to Manhole 6F-3 ~270'

Two readings near the center of the pipe run were 13 nCi and 17 nCi with the rest of the readings below the detection limit.

5.18 Manhole 6F-3 to Manhole 6F ~165'

Activities ranging from 7 nCi to ~ 36 nCi was found in the last 15' of the pipe run towards Manhole 6F, with the majority of the readings below the detection limit.

5.19 Manhole 6F-1 to Manhole 6F ~110'

Activities ranging from 13 nCi to ~ 1,900 nCi were found distributed throughout the entire pipe run.

5.20 Manhole 6F-1 to Manhole 6F-2 ~70'

Activities ranging from 90 nCi to ~ 2,000 nCi were found distributed throughout the entire pipe run.

5.21 Manhole 6F-1 Abandoned Line to Inside Building 5 (Total Length Unknown) ~ 55' Surveyed into Building 5 from Manhole 6F-1. Line Obstructed.

Activities ranging to approximately 11,500 nCi were found evenly distributed throughout the entire pipe run. This pipe run had the highest total activity levels found.

5.22 Manhole 6F-2 to Inside Building 5 ~340' (~300' inside Building 5 not surveyed due to inaccessibility)

Activities ranging from 11 nCi to 18,500 nCi were found distributed throughout the entire pipe run, with the higher activity readings towards Manhole 6F-2.

5.23 Manhole 400SS-1 to Manhole 400SS-2 (North of Building 400, Sanitary Drain System) ~98'

Activities ranging from 5 nCi to ~ 10 nCi were found at random locations in the pipe run, with the majority of readings below the detection limit.

5.24 Manhole 4F to Manhole 2C

Not surveyed, line not found, possibly obstructed.

5.25 Drain Line from Small Parts Shop in Building 5 Leading to Manhole 6F-2 ~310'

Only the accessible portions of this line were surveyed. The open pipe (valve manifold) and clean outs were surveyed. Activities ranging between 108 nCi at clean out H-1, 148 nCi at clean out H-2, and 2852 nCi at the valve manifold in the small parts shop were found.

5.26 Sample Results

The results are attached to this report in Appendix B and C.

Appendix A Characterization Of Outfalls

Sub-sections 5.1 through 5.24

New World Technology Radiological Survey Report

Date:	12/21/97	Time:	O830	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 1 to Man Hole 6				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-62 1x1/2 NaI	PR147601	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D : 127 cpm L_D : 5.55 nCi 0.0056 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
321	23.1	851
I/S Pipe Background		719 CPM
I/S M/H Background		938 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
37	I/S Pipe	252	1	719	-467	0.0E+00	Activity is below LD	Water in Mahole
37.5	"	277	1	719	-442	0.0E+00	Activity is below LD	Newer Concrete
38	"	273	1	719	-446	0.0E+00	Activity is below LD	
3.5	"	266	1	719	-453	0.0E+00	Activity is below LD	
39	"	281	1	719	-438	0.0E+00	Activity is below LD	
39.5	"	247	1	719	-472	0.0E+00	Activity is below LD	
40	"	301	1	719	-418	0.0E+00	Activity is below LD	
40.5	"	231	1	719	-488	0.0E+00	Activity is below LD	
41	"	250	1	719	-469	0.0E+00	Activity is below LD	
41.5	"	247	1	719	-472	0.0E+00	Activity is below LD	
42	"	261	1	719	-458	0.0E+00	Activity is below LD	
42.5	"	288	1	719	-431	0.0E+00	Activity is below LD	
43	"	265	1	719	-454	0.0E+00	Activity is below LD	
43.5	"	248	1	719	-471	0.0E+00	Activity is below LD	
44	"	255	1	719	-464	0.0E+00	Activity is below LD	
44.5	"	291	1	719	-428	0.0E+00	Activity is below LD	
45	"	282	1	719	-437	0.0E+00	Activity is below LD	
45.5	"	307	1	719	-412	0.0E+00	Activity is below LD	
46	"	256	1	719	-463	0.0E+00	Activity is below LD	
46.5	"	264	1	719	-455	0.0E+00	Activity is below LD	
47	"	247	1	719	-472	0.0E+00	Activity is below LD	
47.5	"	286	1	719	-433	0.0E+00	Activity is below LD	
48	"	259	1	719	-460	0.0E+00	Activity is below LD	
48.5	"	283	1	719	-436	0.0E+00	Activity is below LD	
49	"	259	1	719	-460	0.0E+00	Activity is below LD	
49.5	"	274	1	719	-445	0.0E+00	Activity is below LD	
0	"	242	1	719	-477	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/21/97	Time:	O830	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 1 to Man Hole 6				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-62 1x1/2 NaI	PR147601	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D : 127 cpm

Bkrd CPM	Source (nCi)	Source CPM
321	23.1	851
I/S Pipe Background		719 CPM
I/S M/H Background		938 CPM

L_D : 5.55 nCi 0.0056 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
50.5	"	275	1	719	-444	0.0E+00	Activity is below LD	
51	"	272	1	719	-447	0.0E+00	Activity is below LD	
51.5	"	308	1	719	-411	0.0E+00	Activity is below LD	
52	"	285	1	719	-434	0.0E+00	Activity is below LD	
52.5	"	238	1	719	-481	0.0E+00	Activity is below LD	
53	"	243	1	719	-476	0.0E+00	Activity is below LD	
53.5	"	264	1	719	-455	0.0E+00	Activity is below LD	
54	"	266	1	719	-453	0.0E+00	Activity is below LD	
54.5	"	242	1	719	-477	0.0E+00	Activity is below LD	
55	"	222	1	719	-497	0.0E+00	Activity is below LD	
55.5	"	284	1	719	-435	0.0E+00	Activity is below LD	
56	"	307	1	719	-412	0.0E+00	Activity is below LD	
56.5	"	311	1	719	-408	0.0E+00	Activity is below LD	
57	"	236	1	719	-483	0.0E+00	Activity is below LD	
57.5	"	261	1	719	-458	0.0E+00	Activity is below LD	
58	"	252	1	719	-467	0.0E+00	Activity is below LD	
58.5	"	305	1	719	-414	0.0E+00	Activity is below LD	
59	"	254	1	719	-465	0.0E+00	Activity is below LD	
59.5	"	283	1	719	-436	0.0E+00	Activity is below LD	
60	"	228	1	719	-491	0.0E+00	Activity is below LD	
60.5	"	260	1	719	-459	0.0E+00	Activity is below LD	
61	"	223	1	719	-496	0.0E+00	Activity is below LD	
61.5	"	251	1	719	-468	0.0E+00	Activity is below LD	
62	"	266	1	719	-453	0.0E+00	Activity is below LD	
62.5	"	259	1	719	-460	0.0E+00	Activity is below LD	
63	"	245	1	719	-474	0.0E+00	Activity is below LD	
63.5	"	214	1	719	-505	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/21/97	Time:	O830	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 1 to Man Hole 6				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-62 1x1/2 NaI	PR147601	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.010

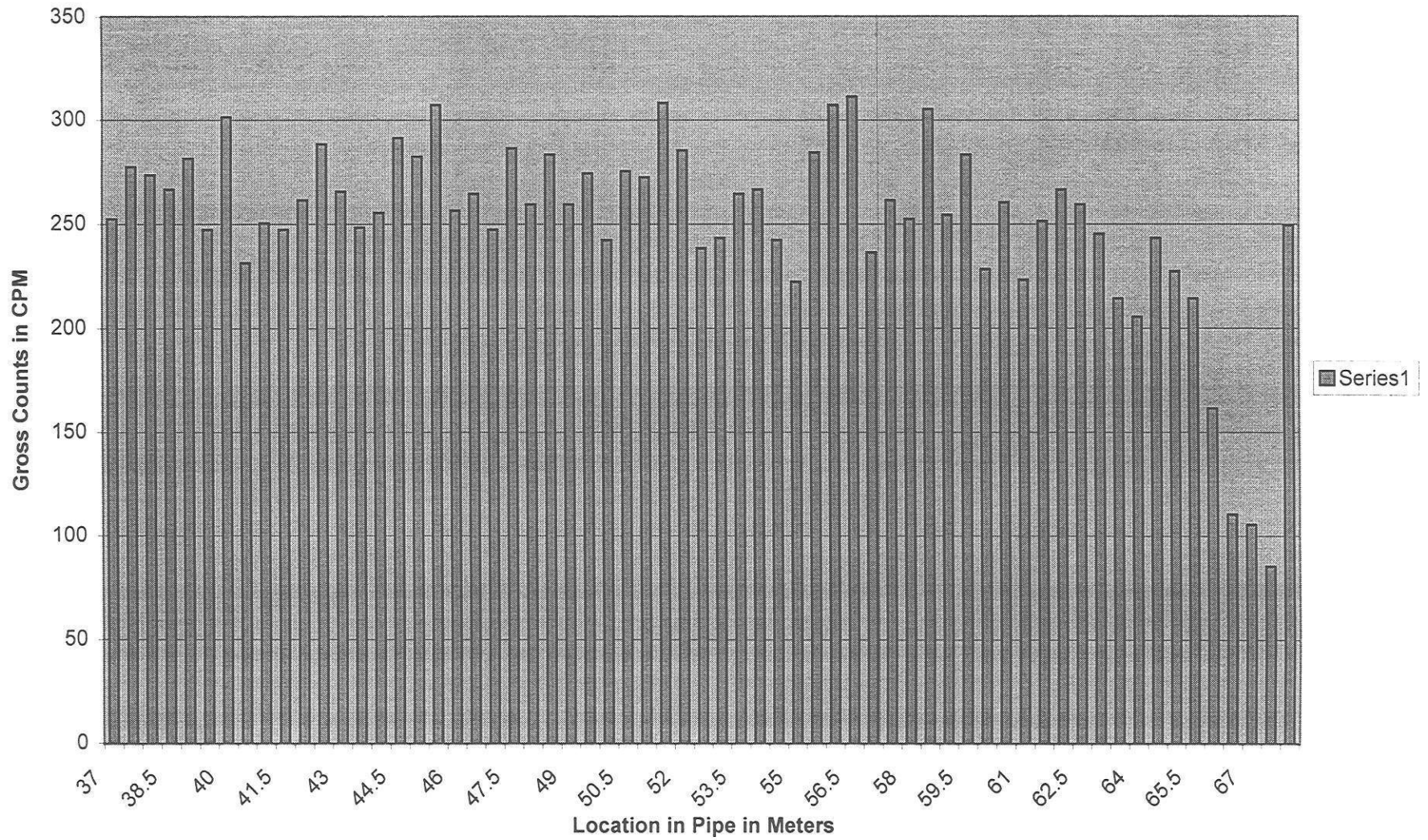
Net counts for L_D : 127 cpm L_D : 5.55 nCi 0.0056 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
321	23.1	851
I/S Pipe Background		719
I/S M/H Background		938
		CPM
		CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
64	"	205	1	719	-514	0.0E+00	Activity is below LD	
64.5	"	243	1	719	-476	0.0E+00	Activity is below LD	
65	"	227	1	719	-492	0.0E+00	Activity is below LD	
65.5	"	214	1	719	-505	0.0E+00	Activity is below LD	
66	Bottom of M/H	161	1	938	-777	0.0E+00	Activity is below LD	
66.5	I/S Manhole	110	1	938	-828	0.0E+00	Activity is below LD	
67	"	105	1	938	-833	0.0E+00	Activity is below LD	
67.5	"	85	1	938	-853	0.0E+00	Activity is below LD	
68	Plane of M/H	249	1	938	-689	0.0E+00	Activity is below LD	

Section 5.1. Figure 1-6-2 Survey Results from Mahnole 1 to Manhole 6



New World Technology Radiological Survey Report

Page 1 of 2

Date:	12/20/97	Time:	1540	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6 to Man Hole 2A				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	1272	1	2528	-1256	0.0E+00	Activity is below LD	Water in Manhole
0.5	I/S Manhole	990	1	2528	-1538	0.0E+00	Activity is below LD	Newer Concrete
1	"	561	1	2528	-1967	0.0E+00	Activity is below LD	
1.5	"	872	1	2528	-1656	0.0E+00	Activity is below LD	
2	I/S Pipe	830	1	1903	-1073	0.0E+00	Activity is below LD	
2.5	"	810	1	1903	-1093	0.0E+00	Activity is below LD	
3	"	1031	1	1903	-872	0.0E+00	Activity is below LD	
3.5	"	860	1	1903	-1043	0.0E+00	Activity is below LD	
4	"	841	1	1903	-1062	0.0E+00	Activity is below LD	
4.5	"	1005	1	1903	-898	0.0E+00	Activity is below LD	
5	"	972	1	1903	-931	0.0E+00	Activity is below LD	
5.5	"	825	1	1903	-1078	0.0E+00	Activity is below LD	
6	"	1180	1	1903	-723	0.0E+00	Activity is below LD	
6.5	"	1060	1	1903	-843	0.0E+00	Activity is below LD	
7	"	944	1	1903	-959	0.0E+00	Activity is below LD	
7.5	"	1090	1	1903	-813	0.0E+00	Activity is below LD	
8	"	995	1	1903	-908	0.0E+00	Activity is below LD	
8.5	"	887	1	1903	-1016	0.0E+00	Activity is below LD	
9	"	1204	1	1903	-699	0.0E+00	Activity is below LD	
9.5	"	1163	1	1903	-740	0.0E+00	Activity is below LD	
10	"	1120	1	1903	-783	0.0E+00	Activity is below LD	
10.5	"	1107	1	1903	-796	0.0E+00	Activity is below LD	
11	"	1056	1	1903	-847	0.0E+00	Activity is below LD	
11.5	"	1052	1	1903	-851	0.0E+00	Activity is below LD	
12	"	1050	1	1903	-853	0.0E+00	Activity is below LD	
12.5	"	1012	1	1903	-891	0.0E+00	Activity is below LD	
13	"	906	1	1903	-997	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 2 of 2

Date:	12/20/97	Time:	1540	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6 to Man Hole 2A				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903
I/S M/H Background		2528

Sample Count Time: 1 minutes

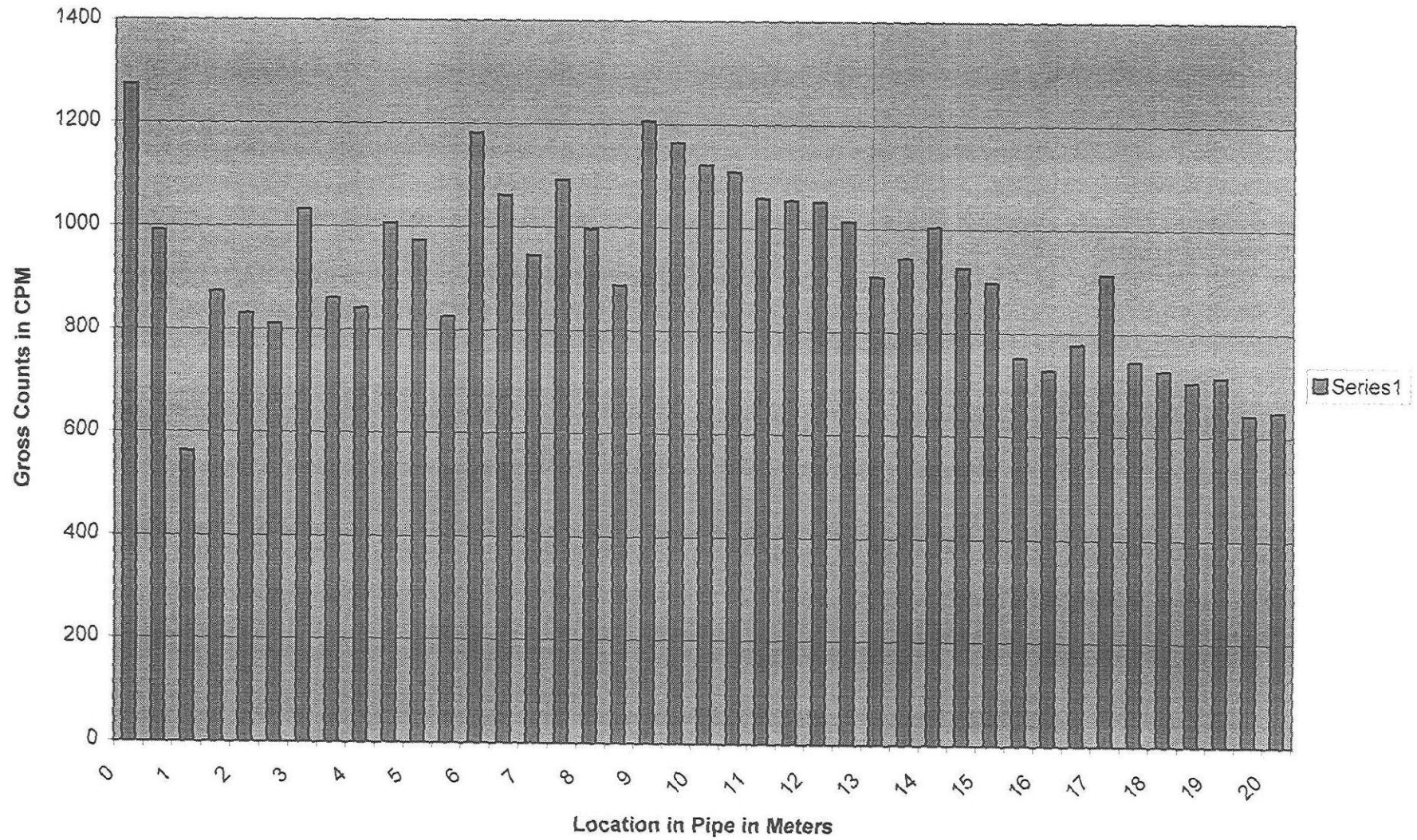
Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	942	1	1903	-961	0.0E+00	Activity is below LD	
14	"	1002	1	1903	-901	0.0E+00	Activity is below LD	
14.5	"	925	1	1903	-978	0.0E+00	Activity is below LD	
15	"	896	1	1903	-1007	0.0E+00	Activity is below LD	
15.5	"	750	1	1903	-1153	0.0E+00	Activity is below LD	
16	"	726	1	1903	-1177	0.0E+00	Activity is below LD	
16.5	"	776	1	1903	-1127	0.0E+00	Activity is below LD	
17	"	912	1	1903	-991	0.0E+00	Activity is below LD	
17.5	"	743	1	1903	-1160	0.0E+00	Activity is below LD	
18	Bottom of M/H	725	1	2528	-1803	0.0E+00	Activity is below LD	
18.5	I/S Manhole	703	1	2528	-1825	0.0E+00	Activity is below LD	
19	"	713	1	2528	-1815	0.0E+00	Activity is below LD	
19.5	"	640	1	2528	-1888	0.0E+00	Activity is below LD	
20	Plane of M/H	646	1	2528	-1882	0.0E+00	Activity is below LD	

Figure 6-2A Survey Results from Mahnole 6 to Manhole 2A



New World Technology Radiological Survey Report

Page 1 of 2

Date:	12/21/97	Time:	O820	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2A to Man Hole 2B				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 206 cpm L_D : 3.95 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1022	23.1	2225	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	1005	1	2528	-1523	0.0E+00	Activity is below LD	Water in Manhole
0.5	I/S Manhole	980	1	2528	-1548	0.0E+00	Activity is below LD	Newer Concrete
1	"	424	1	2528	-2104	0.0E+00	Activity is below LD	
5	"	408	1	2528	-2120	0.0E+00	Activity is below LD	
2	I/S Pipe	920	1	1903	-983	0.0E+00	Activity is below LD	
2.5	"	948	1	1903	-955	0.0E+00	Activity is below LD	
3	"	910	1	1903	-993	0.0E+00	Activity is below LD	
3.5	"	919	1	1903	-984	0.0E+00	Activity is below LD	
4	"	904	1	1903	-999	0.0E+00	Activity is below LD	
4.5	"	863	1	1903	-1040	0.0E+00	Activity is below LD	
5	"	802	1	1903	-1101	0.0E+00	Activity is below LD	
5.5	"	787	1	1903	-1116	0.0E+00	Activity is below LD	
6	"	822	1	1903	-1081	0.0E+00	Activity is below LD	
6.5	"	845	1	1903	-1058	0.0E+00	Activity is below LD	
7	"	868	1	1903	-1035	0.0E+00	Activity is below LD	
7.5	"	853	1	1903	-1050	0.0E+00	Activity is below LD	
8	"	998	1	1903	-905	0.0E+00	Activity is below LD	
8.5	"	1037	1	1903	-866	0.0E+00	Activity is below LD	
9	"	892	1	1903	-1011	0.0E+00	Activity is below LD	
9.5	"	912	1	1903	-991	0.0E+00	Activity is below LD	
10	"	943	1	1903	-960	0.0E+00	Activity is below LD	
10.5	"	910	1	1903	-993	0.0E+00	Activity is below LD	
11	"	824	1	1903	-1079	0.0E+00	Activity is below LD	
11.5	"	800	1	1903	-1103	0.0E+00	Activity is below LD	
12	"	1041	1	1903	-862	0.0E+00	Activity is below LD	
12.5	"	1063	1	1903	-840	0.0E+00	Activity is below LD	
13	I/S Pipe	785	1	1903	-1118	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/21/97	Time:	O820	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2A to Man Hole 2B				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1022	23.1	2225	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Sample Count Time: 1 minutes

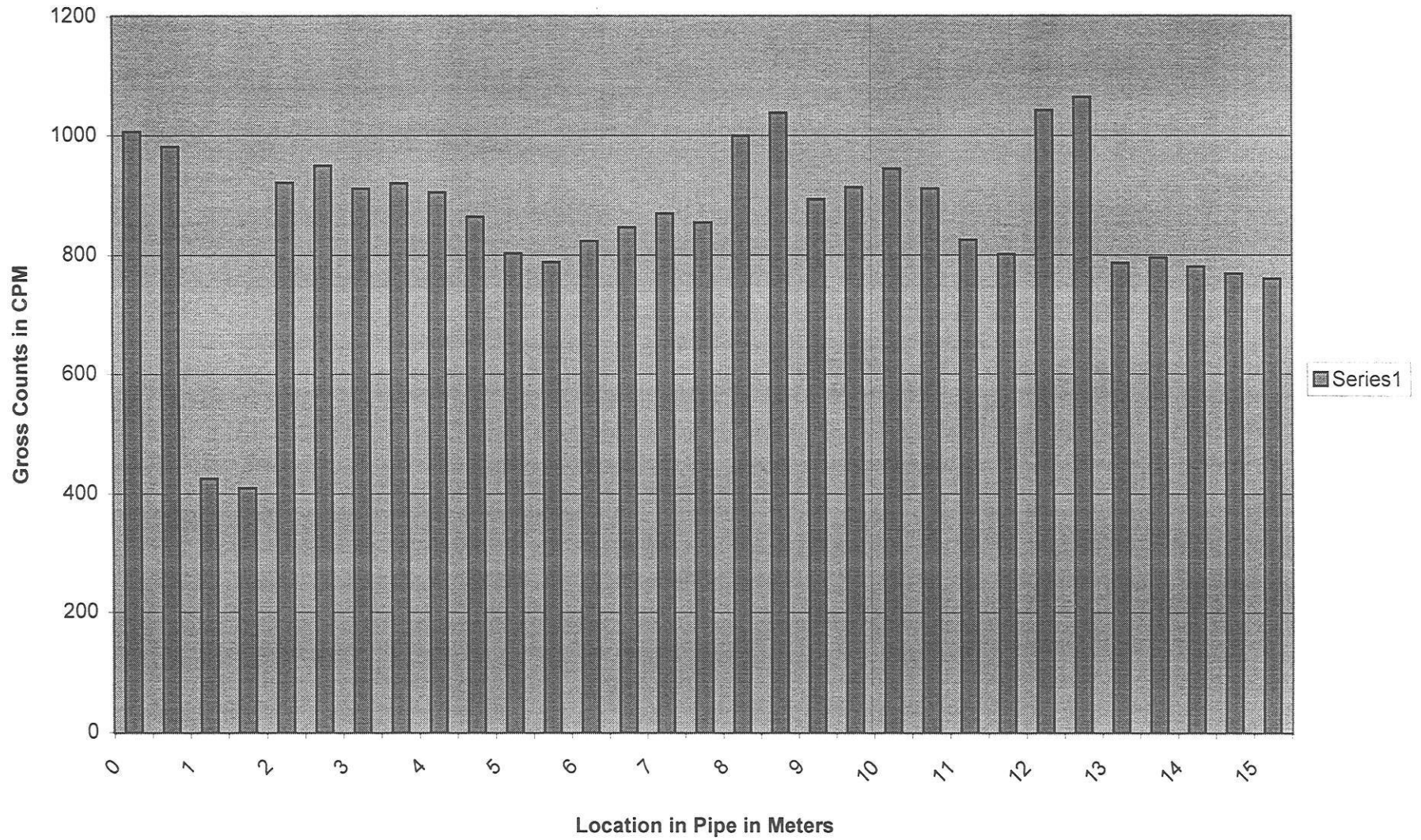
Efficiency: 0.023

Net counts for L_D : 206 cpm L_D : 3.95 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	I/S Manhole	794	1	2528	-1734	0.0E+00	Activity is below LD	
14	"	779	1	2528	-1749	0.0E+00	Activity is below LD	
14.5	"	767	1	2528	-1761	0.0E+00	Activity is below LD	
15	Plane of M/H	759	1	2528	-1769	0.0E+00	Activity is below LD	

Figure 2A-2B Survey Results from Mahnole 2A to Manhole 2B



New World Technology Radiological Survey Report

Date:	12/21/97	Time:	O920	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2B to Man Hole 2C				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM	
1022	23.1	2225	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

L_D : 3.95 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	1554	1	2528	-974	0.0E+00	Activity is below LD	Water in Manhole
0.5	I/S Manhole	510	1	2528	-2018	0.0E+00	Activity is below LD	
1	"	479	1	2528	-2049	0.0E+00	Activity is below LD	
1.5	"	396	1	2528	-2132	0.0E+00	Activity is below LD	
2	I/S Pipe	410	1	1903	-1493	0.0E+00	Activity is below LD	
2.5	"	868	1	1903	-1035	0.0E+00	Activity is below LD	
3	"	850	1	1903	-1053	0.0E+00	Activity is below LD	
3.5	"	890	1	1903	-1013	0.0E+00	Activity is below LD	
4	"	901	1	1903	-1002	0.0E+00	Activity is below LD	
4.5	"	1002	1	1903	-901	0.0E+00	Activity is below LD	
5	"	1023	1	1903	-880	0.0E+00	Activity is below LD	
5.5	"	976	1	1903	-927	0.0E+00	Activity is below LD	
6	"	989	1	1903	-914	0.0E+00	Activity is below LD	
6.5	"	951	1	1903	-952	0.0E+00	Activity is below LD	
7	"	900	1	1903	-1003	0.0E+00	Activity is below LD	
7.5	"	1024	1	1903	-879	0.0E+00	Activity is below LD	
8	"	1159	1	1903	-744	0.0E+00	Activity is below LD	
8.5	"	1290	1	1903	-613	0.0E+00	Activity is below LD	
9	"	1333	1	1903	-570	0.0E+00	Activity is below LD	
9.5	"	1310	1	1903	-593	0.0E+00	Activity is below LD	
10	"	1349	1	1903	-554	0.0E+00	Activity is below LD	
10.5	"	1360	1	1903	-543	0.0E+00	Activity is below LD	
11	"	1389	1	1903	-514	0.0E+00	Activity is below LD	
11.5	"	1444	1	1903	-459	0.0E+00	Activity is below LD	
12	"	1489	1	1903	-414	0.0E+00	Activity is below LD	
12.5	"	1390	1	1903	-513	0.0E+00	Activity is below LD	
13	"	1538	1	1903	-365	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 2 of 3

Date:	12/21/97	Time:	O920	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2B to Man Hole 2C				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 206 cpm L_D : 3.95 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1022	23.1	2225
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	1418	1	1903	-485	0.0E+00	Activity is below LD	
14	"	1436	1	1903	-467	0.0E+00	Activity is below LD	
14.5	"	1360	1	1903	-543	0.0E+00	Activity is below LD	
15	"	1389	1	1903	-514	0.0E+00	Activity is below LD	
15.5	"	1467	1	1903	-436	0.0E+00	Activity is below LD	
16	"	1454	1	1903	-449	0.0E+00	Activity is below LD	
16.5	"	1447	1	1903	-456	0.0E+00	Activity is below LD	
17	"	1483	1	1903	-420	0.0E+00	Activity is below LD	
17.5	"	1425	1	1903	-478	0.0E+00	Activity is below LD	
18	"	1520	1	1903	-383	0.0E+00	Activity is below LD	
18.5	"	1823	1	1903	-80	0.0E+00	Activity is below LD	
19	"	1672	1	1903	-231	0.0E+00	Activity is below LD	
19.5	"	1740	1	1903	-163	0.0E+00	Activity is below LD	
20	"	1647	1	1903	-256	0.0E+00	Activity is below LD	
20.5	"	1617	1	1903	-286	0.0E+00	Activity is below LD	
21	"	1538	1	1903	-365	0.0E+00	Activity is below LD	
21.5	"	1576	1	1903	-327	0.0E+00	Activity is below LD	
22	"	1524	1	1903	-379	0.0E+00	Activity is below LD	
22.5	"	1516	1	1903	-387	0.0E+00	Activity is below LD	
23	"	1484	1	1903	-419	0.0E+00	Activity is below LD	
23.5	"	1512	1	1903	-391	0.0E+00	Activity is below LD	
24	"	1324	1	1903	-579	0.0E+00	Activity is below LD	
24.5	"	1339	1	1903	-564	0.0E+00	Activity is below LD	
25	"	1233	1	1903	-670	0.0E+00	Activity is below LD	
25.5	"	1264	1	1903	-639	0.0E+00	Activity is below LD	
26	"	1300	1	1903	-603	0.0E+00	Activity is below LD	
26.5	"	1220	1	1903	-683	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 3 of 3

Date:	12/21/97	Time:	O920	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2B to Man Hole 2C				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 206 cpm

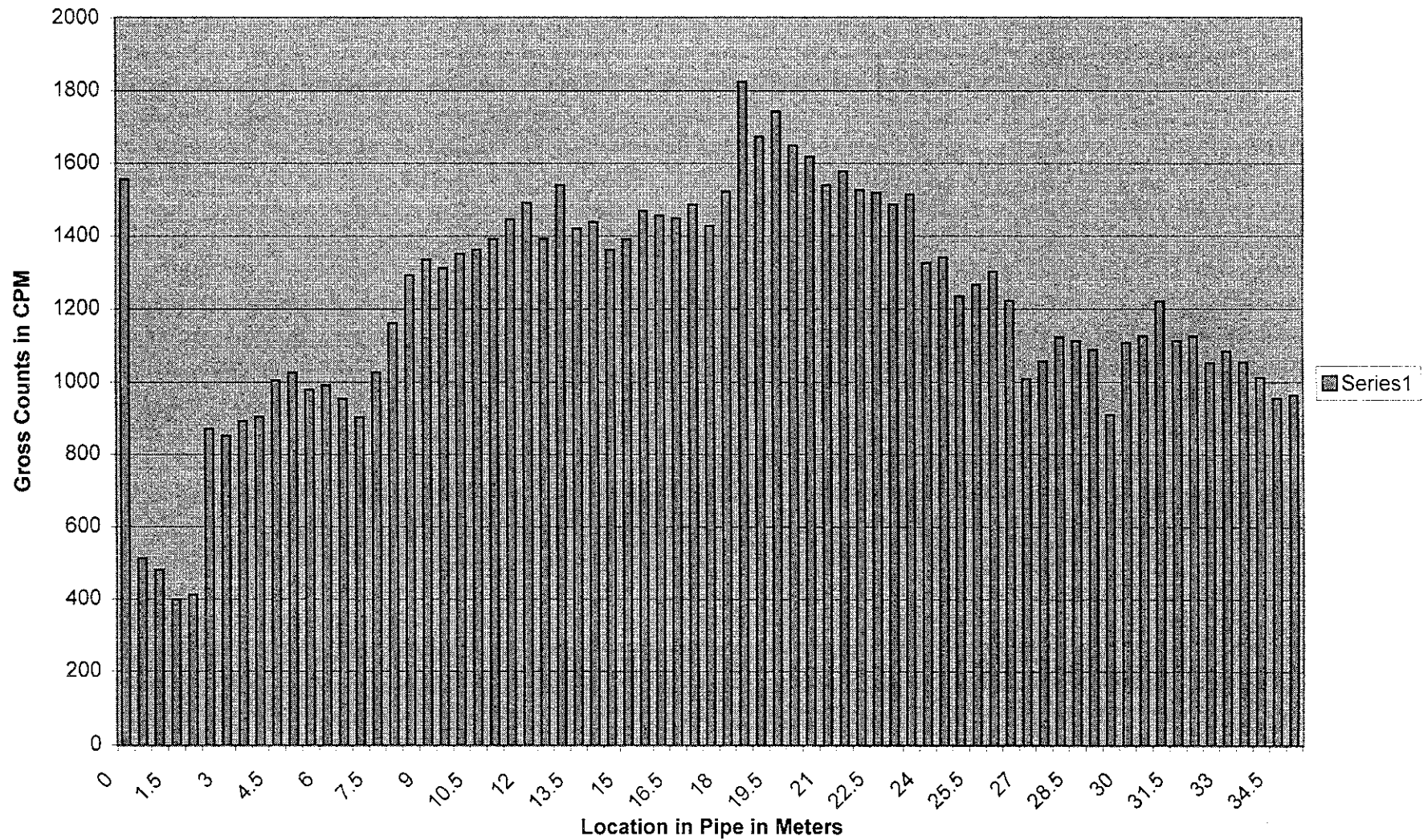
Bkrd CPM	Source (nCi)	Source CPM
1022	23.1	2225
I/S Pipe Background		1903
I/S M/H Background		2528
		CPM
		CPM

L_D : 3.95 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	1006	1	1903	-897	0.0E+00	Activity is below LD	
27.5	"	1055	1	1903	-848	0.0E+00	Activity is below LD	
28	"	1120	1	1903	-783	0.0E+00	Activity is below LD	
28.5	"	1110	1	1903	-793	0.0E+00	Activity is below LD	
29	"	1086	1	1903	-817	0.0E+00	Activity is below LD	
29.5	"	907	1	1903	-996	0.0E+00	Activity is below LD	
30	"	1105	1	1903	-798	0.0E+00	Activity is below LD	
30.5	"	1124	1	1903	-779	0.0E+00	Activity is below LD	
31	"	1218	1	1903	-685	0.0E+00	Activity is below LD	
31.5	"	1110	1	1903	-793	0.0E+00	Activity is below LD	
32	"	1122	1	1903	-781	0.0E+00	Activity is below LD	
32.5	"	1050	1	1903	-853	0.0E+00	Activity is below LD	
33	"	1082	1	1903	-821	0.0E+00	Activity is below LD	
33.5	"	1052	1	1903	-851	0.0E+00	Activity is below LD	
34	Bottom of M/H	1010	1	2528	-1518	0.0E+00	Activity is below LD	
34.5	I/S Manhole	952	1	2528	-1576	0.0E+00	Activity is below LD	
35	"	961	1	2528	-1567	0.0E+00	Activity is below LD	
35.5	Plane of M/H	905	1	2528	-1623	0.0E+00	Activity is below LD	

Figure 2B-2C Survey Results from Mahnole 2B to Manhole 2C



New World Technology Radiological Survey Report

Date:	12/16/97	Time:	1310	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 7 to Man Hole 9				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D : 217 cpm L_D : 4.54 nCi 0.0045 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1000	23.1	2102
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	1077	1	2803	-1726	0.0E+00	Activity is below LD	
0.5	I/S Manhole	2025	1	2803	-778	0.0E+00	Activity is below LD	
1	"	2066	1	2803	-737	0.0E+00	Activity is below LD	
5	"	1923	1	2803	-880	0.0E+00	Activity is below LD	
2	"	1868	1	2803	-935	0.0E+00	Activity is below LD	
2.5	I/S Pipe	1753	1	2120	-367	0.0E+00	Activity is below LD	
3	"	1724	1	2120	-396	0.0E+00	Activity is below LD	
3.5	"	1745	1	2120	-375	0.0E+00	Activity is below LD	
4	"	1687	1	2120	-433	0.0E+00	Activity is below LD	
4.5	"	1835	1	2120	-285	0.0E+00	Activity is below LD	
5	"	1751	1	2120	-369	0.0E+00	Activity is below LD	
5.5	"	1754	1	2120	-366	0.0E+00	Activity is below LD	
6	"	1722	1	2120	-398	0.0E+00	Activity is below LD	
6.5	"	1891	1	2120	-229	0.0E+00	Activity is below LD	
7	"	1778	1	2120	-342	0.0E+00	Activity is below LD	
7.5	"	1828	1	2120	-292	0.0E+00	Activity is below LD	
8	"	1877	1	2120	-243	0.0E+00	Activity is below LD	
8.5	"	1703	1	2120	-417	0.0E+00	Activity is below LD	
9	"	1738	1	2120	-382	0.0E+00	Activity is below LD	
9.5	"	1746	1	2120	-374	0.0E+00	Activity is below LD	
10	"	1736	1	2120	-384	0.0E+00	Activity is below LD	
10.5	"	1849	1	2120	-271	0.0E+00	Activity is below LD	
11	"	1823	1	2120	-297	0.0E+00	Activity is below LD	
11.5	"	1711	1	2120	-409	0.0E+00	Activity is below LD	
12	"	1760	1	2120	-360	0.0E+00	Activity is below LD	
2.5	"	1787	1	2120	-333	0.0E+00	Activity is below LD	
3	"	1816	1	2120	-304	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/16/97	Time:	1310	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 7 to Man Hole 9				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D : 217 cpm

Bkrd CPM	Source (nCi)	Source CPM
1000	23.1	2102
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

L_D : 4.54 nCi 0.0045 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	1688	1	2120	-432	0.0E+00	Activity is below LD	
14	"	1731	1	2120	-389	0.0E+00	Activity is below LD	
14.5	"	1688	1	2120	-432	0.0E+00	Activity is below LD	
15	"	1684	1	2120	-436	0.0E+00	Activity is below LD	
15.5	"	1635	1	2120	-485	0.0E+00	Activity is below LD	
16	"	1653	1	2120	-467	0.0E+00	Activity is below LD	
16.5	"	1728	1	2120	-392	0.0E+00	Activity is below LD	
17	"	1595	1	2120	-525	0.0E+00	Activity is below LD	
17.5	"	1675	1	2120	-445	0.0E+00	Activity is below LD	
18	"	1630	1	2120	-490	0.0E+00	Activity is below LD	
18.5	"	1666	1	2120	-454	0.0E+00	Activity is below LD	
19	"	1663	1	2120	-457	0.0E+00	Activity is below LD	
19.5	"	1608	1	2120	-512	0.0E+00	Activity is below LD	
20	"	1620	1	2120	-500	0.0E+00	Activity is below LD	
20.5	"	1675	1	2120	-445	0.0E+00	Activity is below LD	
21	"	1662	1	2120	-458	0.0E+00	Activity is below LD	
21.5	"	1624	1	2120	-496	0.0E+00	Activity is below LD	
22	"	1647	1	2120	-473	0.0E+00	Activity is below LD	
22.5	"	1604	1	2120	-516	0.0E+00	Activity is below LD	
23	"	1484	1	2120	-636	0.0E+00	Activity is below LD	
23.5	"	1471	1	2120	-649	0.0E+00	Activity is below LD	
24	"	1466	1	2120	-654	0.0E+00	Activity is below LD	
24.5	"	1405	1	2120	-715	0.0E+00	Activity is below LD	
25	"	1376	1	2120	-744	0.0E+00	Activity is below LD	
25.5	"	1380	1	2120	-740	0.0E+00	Activity is below LD	
26	"	1405	1	2120	-715	0.0E+00	Activity is below LD	
26.5	"	1701	1	2120	-419	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/16/97	Time:	1310	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 7 to Man Hole 9				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D : 217 cpm

Bkrd CPM	Source (nCi)	Source CPM
1000	23.1	2102
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

L_D : 4.54 nCi

0.0045

μCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
27	"	1838	1	2120	-282	0.0E+00	Activity is below LD	
27.5	"	1760	1	2120	-360	0.0E+00	Activity is below LD	
28	"	1811	1	2120	-309	0.0E+00	Activity is below LD	
5	"	1794	1	2120	-326	0.0E+00	Activity is below LD	
29	"	1976	1	2120	-144	0.0E+00	Activity is below LD	
29.5	"	1876	1	2120	-244	0.0E+00	Activity is below LD	
30	"	1927	1	2120	-193	0.0E+00	Activity is below LD	
30.5	"	1982	1	2120	-138	0.0E+00	Activity is below LD	
31	"	1896	1	2120	-224	0.0E+00	Activity is below LD	
31.5	"	1875	1	2120	-245	0.0E+00	Activity is below LD	
32	"	1750	1	2120	-370	0.0E+00	Activity is below LD	
32.5	"	1799	1	2120	-321	0.0E+00	Activity is below LD	
33	"	1753	1	2120	-367	0.0E+00	Activity is below LD	
33.5	"	1758	1	2120	-362	0.0E+00	Activity is below LD	
34	"	1751	1	2120	-369	0.0E+00	Activity is below LD	
34.5	"	1775	1	2120	-345	0.0E+00	Activity is below LD	
35	"	1742	1	2120	-378	0.0E+00	Activity is below LD	
35.5	"	1780	1	2120	-340	0.0E+00	Activity is below LD	
36	"	1776	1	2120	-344	0.0E+00	Activity is below LD	
36.5	"	1752	1	2120	-368	0.0E+00	Activity is below LD	
37	"	1810	1	2120	-310	0.0E+00	Activity is below LD	
37.5	"	1697	1	2120	-423	0.0E+00	Activity is below LD	
38	"	1727	1	2120	-393	0.0E+00	Activity is below LD	
38.5	"	1627	1	2120	-493	0.0E+00	Activity is below LD	
39	"	1661	1	2120	-459	0.0E+00	Activity is below LD	
5	"	1697	1	2120	-423	0.0E+00	Activity is below LD	
	"	1730	1	2120	-390	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/16/97	Time:	1310	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 7 to Man Hole 9				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D : 217 cpm L_D : 4.54 nCi 0.0045 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1000	23.1	2102
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	1761	1	2120	-359	0.0E+00	Activity is below LD	
41	"	1687	1	2120	-433	0.0E+00	Activity is below LD	
41.5	"	1740	1	2120	-380	0.0E+00	Activity is below LD	
42	"	1725	1	2120	-395	0.0E+00	Activity is below LD	
42.5	"	1825	1	2120	-295	0.0E+00	Activity is below LD	
43	"	1756	1	2120	-364	0.0E+00	Activity is below LD	
43.5	"	1763	1	2120	-357	0.0E+00	Activity is below LD	
44	"	1875	1	2120	-245	0.0E+00	Activity is below LD	
44.5	"	1794	1	2120	-326	0.0E+00	Activity is below LD	
45	"	1836	1	2120	-284	0.0E+00	Activity is below LD	
45.5	"	1802	1	2120	-318	0.0E+00	Activity is below LD	
46	"	1799	1	2120	-321	0.0E+00	Activity is below LD	
46.5	"	1749	1	2120	-371	0.0E+00	Activity is below LD	
47	"	1857	1	2120	-263	0.0E+00	Activity is below LD	
47.5	"	1718	1	2120	-402	0.0E+00	Activity is below LD	
48	"	1736	1	2120	-384	0.0E+00	Activity is below LD	
48.5	"	1630	1	2120	-490	0.0E+00	Activity is below LD	
49	"	1688	1	2120	-432	0.0E+00	Activity is below LD	
49.5	"	1720	1	2120	-400	0.0E+00	Activity is below LD	
50	"	1726	1	2120	-394	0.0E+00	Activity is below LD	
50.5	"	1763	1	2120	-357	0.0E+00	Activity is below LD	
51	"	1654	1	2120	-466	0.0E+00	Activity is below LD	
51.5	"	1677	1	2120	-443	0.0E+00	Activity is below LD	
52	"	1630	1	2120	-490	0.0E+00	Activity is below LD	
52.5	"	1578	1	2120	-542	0.0E+00	Activity is below LD	
53	"	1533	1	2120	-587	0.0E+00	Activity is below LD	
53.5	"	1568	1	2120	-552	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 5 of 5

Date:	12/16/97	Time:	1310	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 7 to Man Hole 9				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Bkrd CPM	Source (nCi)	Source CPM
1000	23.1	2102
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

Sample Count Time: 1 minutes

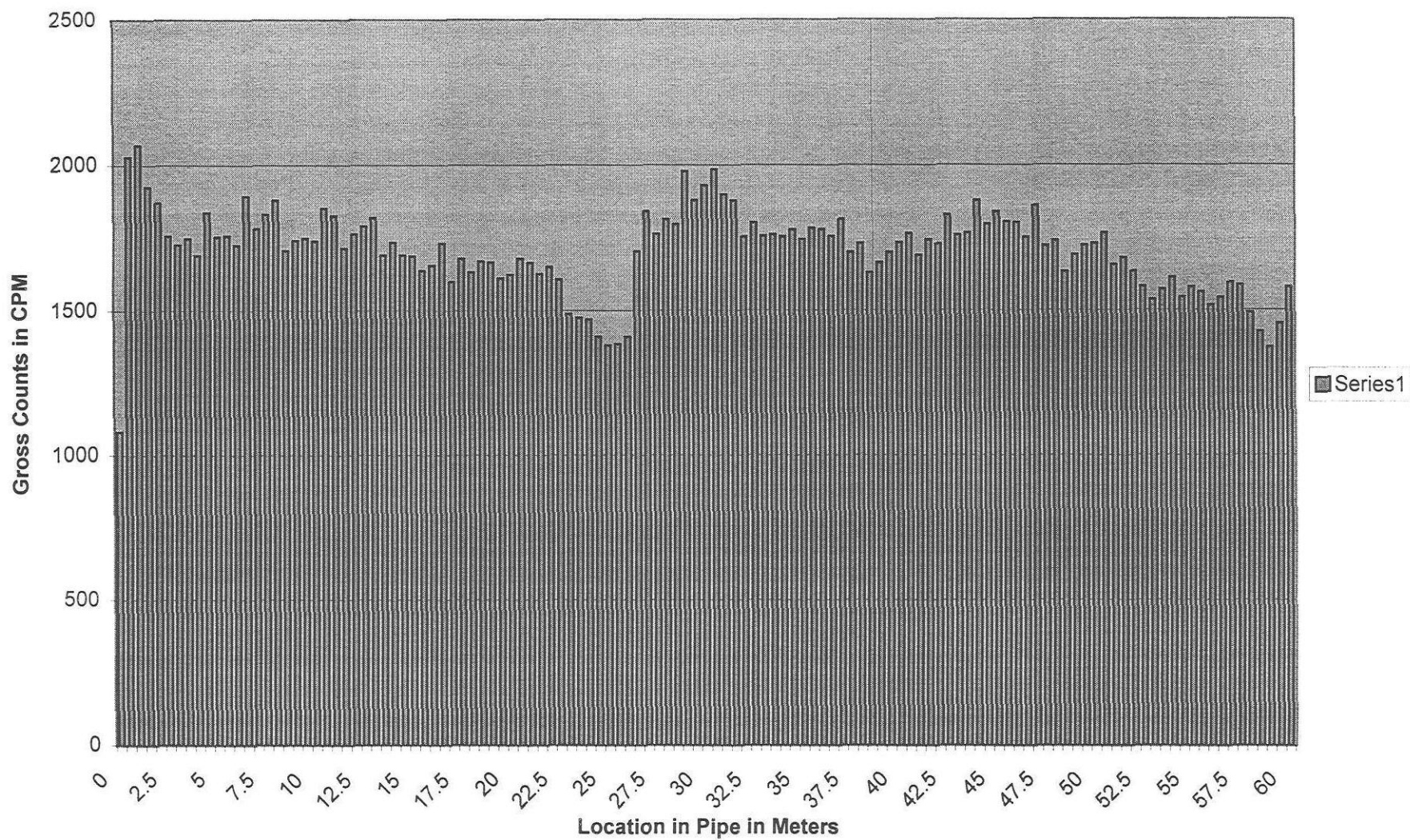
Efficiency: 0.021

Net counts for L_D : 217 cpm L_D : 4.54 nCi 0.0045 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	1609	1	2120	-511	0.0E+00	Activity is below LD	
54.5	"	1541	1	2120	-579	0.0E+00	Activity is below LD	
55	"	1576	1	2120	-544	0.0E+00	Activity is below LD	
55.5	"	1559	1	2120	-561	0.0E+00	Activity is below LD	
56	"	1513	1	2120	-607	0.0E+00	Activity is below LD	
56.5	"	1540	1	2120	-580	0.0E+00	Activity is below LD	
57	"	1591	1	2120	-529	0.0E+00	Activity is below LD	
57.5	"	1583	1	2120	-537	0.0E+00	Activity is below LD	
58	"	1487	1	2120	-633	0.0E+00	Activity is below LD	
58.5	"	1422	1	2120	-698	0.0E+00	Activity is below LD	
59	"	1368	1	2120	-752	0.0E+00	Activity is below LD	
59.5	"	1449	1	2120	-671	0.0E+00	Activity is below LD	
60	"	1576	1	2120	-544	0.0E+00	Activity is below LD	

Figure 7-9 Survey Results from Mahnole 7 to Manhole 9



New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1250	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 3F to Man Hole 3F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.88 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	CPM
I/S M/H Background		2544	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	2314	1	2544	-230	0.0E+00	Activity is below LD	
0.5	I/S Manhole	2995	1	2544	451	8.5E-03	9	
1	"	2956	1	2544	412	7.8E-03	8	
1.5	"	2558	1	2544	14	2.6E-04	Activity is below LD	
2	"	101690	1	2544	99146	1.9E+00	1873	Recount 102,400
2.5	I/S Pipe	2558	1	1903	655	1.2E-02	12	
3	"	15595	1	1903	13692	2.6E-01	259	
3.5	"	479873	1	1903	477970	9.0E+00	9028	Recount 456,162
4	"	231520	1	1903	229617	4.3E+00	4337	
4.5	"	44582	1	1903	42679	8.1E-01	806	
5	"	32849	1	1903	30946	5.8E-01	585	
5.5	"	16877	1	1903	14974	2.8E-01	283	
6	"	57859	1	1903	55956	1.1E+00	1057	
6.5	"	91657	1	1903	89754	1.7E+00	1695	
7	"	158367	1	1903	156464	3.0E+00	2955	
7.5	"	166824	1	1903	164921	3.1E+00	3115	
8	"	130024	1	1903	128121	2.4E+00	2420	
8.5	"	436470	1	1903	434567	8.2E+00	8208	
9	"	312845	1	1903	310942	5.9E+00	5873	
9.5	"	316177	1	1903	314274	5.9E+00	5936	
10	"	199342	1	1903	197439	3.7E+00	3729	
10.5	"	122907	1	1903	121004	2.3E+00	2286	
11	"	94122	1	1903	92219	1.7E+00	1742	
11.5	"	102490	1	1903	100587	1.9E+00	1900	
12	"	93732	1	1903	91829	1.7E+00	1734	
12.5	"	69719	1	1903	67816	1.3E+00	1281	
13	"	59574	1	1903	57671	1.1E+00	1089	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1250	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 3F to Man Hole 3F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.88 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	CPM
I/S M/H Background		2544	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	61877	1	1903	59974	1.1E+00	1133	
14	"	44205	1	1903	42302	8.0E-01	799	
14.5	"	29801	1	1903	27898	5.3E-01	527	
15	"	19748	1	1903	17845	3.4E-01	337	
15.5	"	16179	1	1903	14276	2.7E-01	270	
16	"	6825	1	1903	4922	9.3E-02	93	
16.5	"	5898	1	1903	3995	7.5E-02	75	
17	"	5270	1	1903	3367	6.4E-02	64	
17.5	"	4047	1	1903	2144	4.0E-02	40	
18	"	3586	1	1903	1683	3.2E-02	32	
18.5	"	2847	1	1903	944	1.8E-02	18	
19	"	3317	1	1903	1414	2.7E-02	27	
19.5	"	3215	1	1903	1312	2.5E-02	25	
20	"	2922	1	1903	1019	1.9E-02	19	
20.5	"	2724	1	1903	821	1.6E-02	16	
21	"	2875	1	1903	972	1.8E-02	18	
21.5	"	2822	1	1903	919	1.7E-02	17	
22	"	2981	1	1903	1078	2.0E-02	20	
22.5	"	2684	1	1903	781	1.5E-02	15	
23	"	2636	1	1903	733	1.4E-02	14	
23.5	"	2523	1	1903	620	1.2E-02	12	
24	"	2327	1	1903	424	8.0E-03	8	
24.5	"	2337	1	1903	434	8.2E-03	8	
25	"	2302	1	1903	399	7.5E-03	8	
25.5	"	2210	1	1903	307	5.8E-03	6	
26	"	2219	1	1903	316	6.0E-03	6	
26.5	"	2339	1	1903	436	8.2E-03	8	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1250	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 3F to Man Hole 3F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.88 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
995	23.1	2218
I/S Pipe Background		1903 CPM
I/S M/H Background		2544 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2238	1	1903	335	6.3E-03	6	
27.5	"	2503	1	1903	600	1.1E-02	11	
28	"	2446	1	1903	543	1.0E-02	10	
28.5	"	2510	1	1903	607	1.1E-02	11	
29	"	2335	1	1903	432	8.2E-03	8	
29.5	"	2308	1	1903	405	7.6E-03	8	
30	"	2472	1	1903	569	1.1E-02	11	
30.5	"	2367	1	1903	464	8.8E-03	9	
31	"	2427	1	1903	524	9.9E-03	10	
31.5	"	2520	1	1903	617	1.2E-02	12	
32	"	2503	1	1903	600	1.1E-02	11	
32.5	"	2202	1	1903	299	5.6E-03	6	
33	"	2360	1	1903	457	8.6E-03	9	
33.5	"	2270	1	1903	367	6.9E-03	7	
34	"	2256	1	1903	353	6.7E-03	7	
34.5	"	2413	1	1903	510	9.6E-03	10	
35	"	2218	1	1903	315	5.9E-03	6	
35.5	"	2182	1	1903	279	5.3E-03	5	
36	"	2369	1	1903	466	8.8E-03	9	
36.5	"	2251	1	1903	348	6.6E-03	7	
37	"	2187	1	1903	284	5.4E-03	5	
37.5	"	2161	1	1903	258	4.9E-03	5	
38	"	2225	1	1903	322	6.1E-03	6	
38.5	"	2223	1	1903	320	6.0E-03	6	
39	"	2236	1	1903	333	6.3E-03	6	
39.5	"	2168	1	1903	265	5.0E-03	5	
40	"	2193	1	1903	290	5.5E-03	5	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1250	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 3F to Man Hole 3F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.88 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	CPM
I/S M/H Background		2544	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	2246	1	1903	343	6.5E-03	6	
41	"	2138	1	1903	235	4.4E-03	4	
41.5	"	2172	1	1903	269	5.1E-03	5	
42	"	2113	1	1903	210	4.0E-03	4	
42.5	"	2035	1	1903	132	2.5E-03	Activity is below LD	
43	"	2045	1	1903	142	2.7E-03	Activity is below LD	
43.5	"	2210	1	1903	307	5.8E-03	6	
44	"	2056	1	1903	153	2.9E-03	Activity is below LD	
44.5	"	2035	1	1903	132	2.5E-03	Activity is below LD	
45	"	1953	1	1903	50	9.4E-04	Activity is below LD	
45.5	"	2025	1	1903	122	2.3E-03	Activity is below LD	
46	"	1973	1	1903	70	1.3E-03	Activity is below LD	
46.5	"	1906	1	1903	3	5.7E-05	Activity is below LD	
47	"	2021	1	1903	118	2.2E-03	Activity is below LD	
47.5	"	1937	1	1903	34	6.4E-04	Activity is below LD	
48	"	1929	1	1903	26	4.9E-04	Activity is below LD	
48.5	"	1883	1	1903	-20	0.0E+00	Activity is below LD	
49	"	1959	1	1903	56	1.1E-03	Activity is below LD	
49.5	"	1920	1	1903	17	3.2E-04	Activity is below LD	
50	"	1838	1	1903	-65	0.0E+00	Activity is below LD	
50.5	"	1847	1	1903	-56	0.0E+00	Activity is below LD	
51	"	2002	1	1903	99	1.9E-03	Activity is below LD	
51.5	"	1864	1	1903	-39	0.0E+00	Activity is below LD	
52	"	1872	1	1903	-31	0.0E+00	Activity is below LD	
52.5	"	1911	1	1903	8	1.5E-04	Activity is below LD	
53	"	1878	1	1903	-25	0.0E+00	Activity is below LD	
53.5	"	2041	1	1903	138	2.6E-03	Activity is below LD	

New World Technology Radiological Survey Report

Page 5 of 5

Date:	12/18/97	Time:	1250	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 3F to Man Hole 3F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm

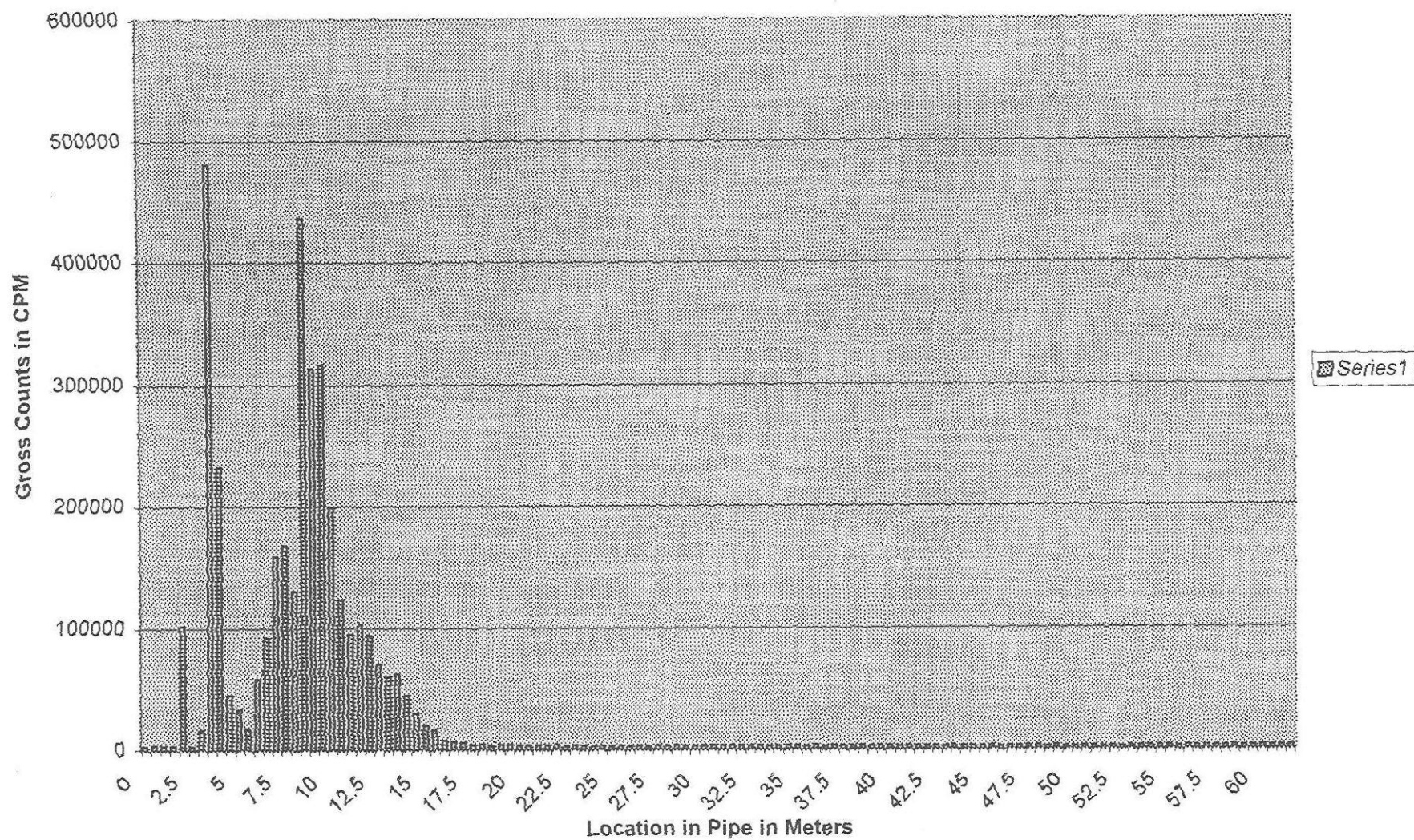
Bkrd CPM	Source (nCi)	Source CPM
995	23.1	2218
I/S Pipe Background		1903
I/S M/H Background		2544
		CPM

L_D : 3.88 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2042	1	1903	139	2.6E-03	Activity is below LD	
54.5	"	1949	1	1903	46	8.7E-04	Activity is below LD	
55	"	2042	1	1903	139	2.6E-03	Activity is below LD	
55.5	"	1937	1	1903	34	6.4E-04	Activity is below LD	
56	"	1855	1	1903	-48	0.0E+00	Activity is below LD	
56.5	"	1939	1	1903	36	6.8E-04	Activity is below LD	
57	"	1953	1	1903	50	9.4E-04	Activity is below LD	
57.5	"	1886	1	1903	-17	0.0E+00	Activity is below LD	
58	"	1983	1	1903	80	1.5E-03	Activity is below LD	
58.5	"	2076	1	1903	173	3.3E-03	Activity is below LD	
59	"	2039	1	2544	-505	0.0E+00	Activity is below LD	
59.5	Bottom of M/H	2110	1	2544	-434	0.0E+00	Activity is below LD	
60	Inside M/H	2055	1	2544	-489	0.0E+00	Activity is below LD	
60.5	"	2080	1	2544	-464	0.0E+00	Activity is below LD	
61	"	2145	1	2544	-399	0.0E+00	Activity is below LD	
61.5	Plane of M/H	2444	1	2544	-100	0.0E+00	Activity is below LD	

Figure 3F-3F1 Survey Results from Manhole 3F to Manhole 3F1



New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O815	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for Lp: 217 cpm Lp: 4.61 nCi 0.0046 µCi

Bkrd CPM	Source (nCi)	Source CPM
1023	23.1	2110
I/S Pipe Background		2120 CPM
I/S M/H Background		2803 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	1530	1	2803	-1273	0.0E+00	Activity is below LD	Manhole Full of Water
0.5	I/S Manhole	1194	1	2803	-1609	0.0E+00	Activity is below LD	
1	"	1236	1	2803	-1567	0.0E+00	Activity is below LD	
5	"	1264	1	2803	-1539	0.0E+00	Activity is below LD	
2	I/S Pipe	1311	1	2120	-809	0.0E+00	Activity is below LD	
2.5	"	1592	1	2120	-528	0.0E+00	Activity is below LD	
3	"	1589	1	2120	-531	0.0E+00	Activity is below LD	
3.5	"	2034	1	2120	-86	0.0E+00	Activity is below LD	
4	"	2290	1	2120	170	3.6E-03	Activity is below LD	
4.5	"	2226	1	2120	106	2.3E-03	Activity is below LD	
5	"	2257	1	2120	137	2.9E-03	Activity is below LD	
5.5	"	1988	1	2120	-132	0.0E+00	Activity is below LD	
6	"	2073	1	2120	-47	0.0E+00	Activity is below LD	
6.5	"	2332	1	2120	212	4.5E-03	Activity is below LD	
7	"	2325	1	2120	205	4.4E-03	Activity is below LD	
7.5	"	2294	1	2120	174	3.7E-03	Activity is below LD	
8	"	2164	1	2120	44	9.4E-04	Activity is below LD	
8.5	"	2230	1	2120	110	2.3E-03	Activity is below LD	
9	"	2313	1	2120	193	4.1E-03	Activity is below LD	
9.5	"	2335	1	2120	215	4.6E-03	Activity is below LD	
10	"	2372	1	2120	252	5.4E-03	5	
10.5	"	2466	1	2120	346	7.4E-03	7	
11	"	2285	1	2120	165	3.5E-03	Activity is below LD	
11.5	"	2431	1	2120	311	6.6E-03	7	
12	"	2398	1	2120	278	5.9E-03	6	
12.5	"	2276	1	2120	156	3.3E-03	Activity is below LD	
3	"	2200	1	2120	80	1.7E-03	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O815	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D : 217 cpm L_D : 4.61 nCi 0.0046 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1023	23.1	2110	
I/S Pipe Background		2120	CPM
I/S M/H Background		2803	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	2186	1	2120	66	1.4E-03	Activity is below LD	
14	"	2174	1	2120	54	1.1E-03	Activity is below LD	
14.5	"	2184	1	2120	64	1.4E-03	Activity is below LD	
15	"	2015	1	2120	-105	0.0E+00	Activity is below LD	
15.5	"	1750	1	2120	-370	0.0E+00	Activity is below LD	
16	"	2031	1	2120	-89	0.0E+00	Activity is below LD	
16.5	"	2128	1	2120	8	1.7E-04	Activity is below LD	
17	"	2251	1	2120	131	2.8E-03	Activity is below LD	
17.5	"	2147	1	2120	27	5.7E-04	Activity is below LD	
18	"	2342	1	2120	222	4.7E-03	5	
18.5	"	2386	1	2120	266	5.7E-03	6	
19	"	2351	1	2120	231	4.9E-03	5	
19.5	"	2506	1	2120	386	8.2E-03	8	
20	"	2299	1	2120	179	3.8E-03	Activity is below LD	
20.5	"	2389	1	2120	269	5.7E-03	6	
21	"	2518	1	2120	398	8.5E-03	8	
21.5	"	2480	1	2120	360	7.7E-03	8	
22	"	2606	1	2120	486	1.0E-02	10	
22.5	"	2530	1	2120	410	8.7E-03	9	
23	"	2504	1	2120	384	8.2E-03	8	
23.5	"	2363	1	2120	243	5.2E-03	5	
24	"	2388	1	2120	268	5.7E-03	6	
24.5	"	2408	1	2120	288	6.1E-03	6	
25	"	2346	1	2120	226	4.8E-03	5	
25.5	"	2319	1	2120	199	4.2E-03	Activity is below LD	
26	"	2432	1	2120	312	6.6E-03	7	
26.5	"	2394	1	2120	274	5.8E-03	6	

New World Technology Radiological Survey Report

Page 3 of 3

Date:	12/20/97	Time:	O815	Surveyor (print):	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.021

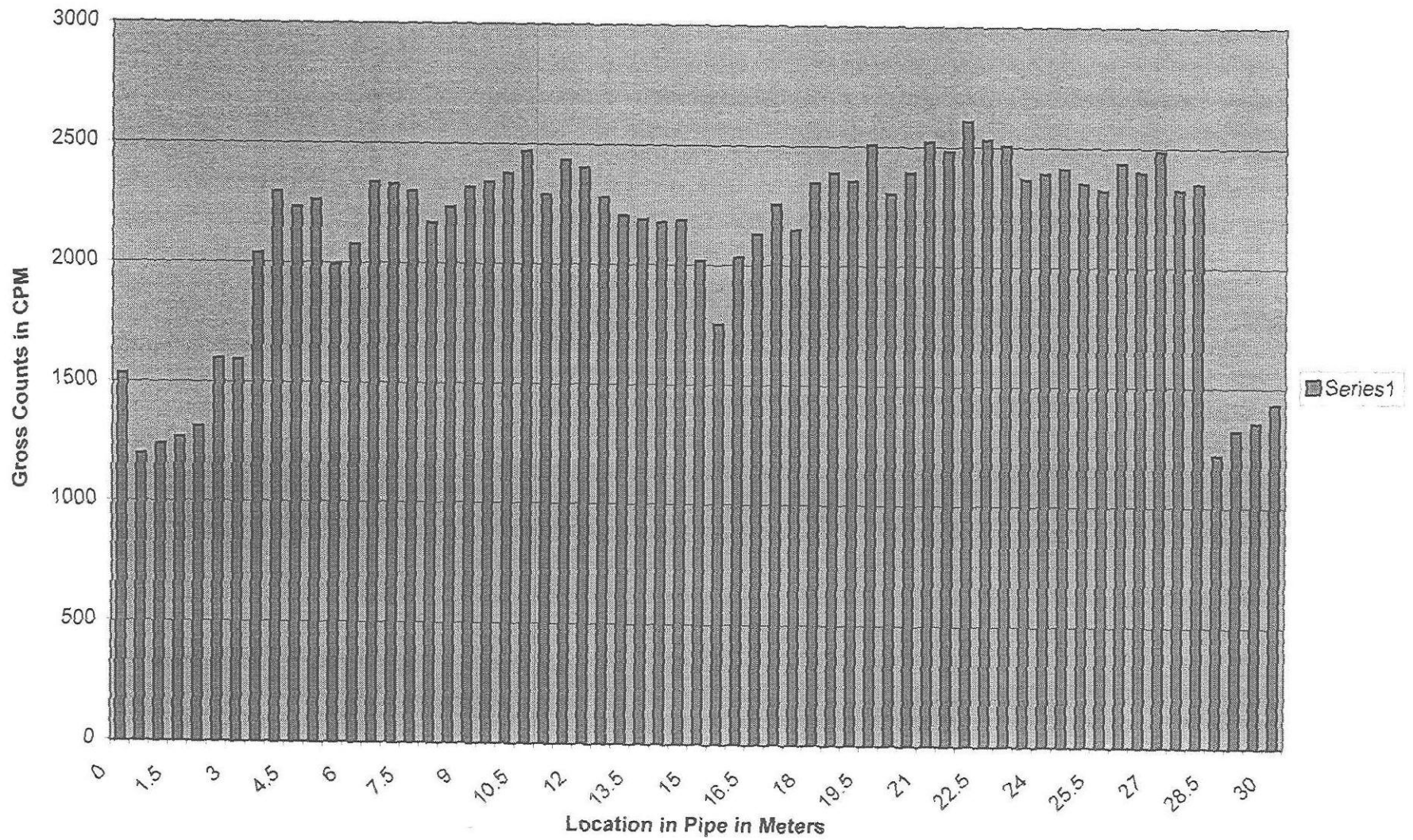
Net counts for L_D : 217 cpm L_D : 4.61 nCi 0.0046 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1023	23.1	2110	
I/S Pipe Background		2120	CPM
I/S M/H Background		2803	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2484	1	2120	364	7.7E-03	8	
27.5	"	2320	1	2120	200	4.3E-03	Activity is below LD	
28	"	2346	1	2120	226	4.8E-03	5	
28.5	Bottom of M/H	1214	1	2803	-1589	0.0E+00	Activity is below LD	
29	Inside M/H	1318	1	2803	-1485	0.0E+00	Activity is below LD	
29.5	"	1351	1	2803	-1452	0.0E+00	Activity is below LD	
30	Plane of M/H	1429	1	2803	-1374	0.0E+00	Activity is below LD	

Figure 400SS1-400SS2 Survey Results from Mahnole 400SS-1 to Manhole 400SS-2



New World Technology Radiological Survey Report

Date:	12/17/97	Time:	1245	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 203 cpm L_D : 3.93 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1507	23.1	2702
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	2737	1	3237	-500	0.0E+00	Activity is below LD	
0.5	I/S M/H	3394	1	3237	157	3.0E-03	Activity is below LD	
1	"	3044	1	3237	-193	0.0E+00	Activity is below LD	
1.5	"	1221	1	3237	-2016	0.0E+00	Activity is below LD	
2	"	556	1	3237	-2681	0.0E+00	Activity is below LD	
2.5	I/S Pipe	837	1	1857	-1020	0.0E+00	Activity is below LD	
3	"	1661	1	1857	-196	0.0E+00	Activity is below LD	
3.5	"	7358	1	1857	5501	1.1E-01	106	
4	"	12157	1	1857	10300	2.0E-01	199	
4.5	"	20485	1	1857	18628	3.6E-01	360	
5	"	20082	1	1857	18225	3.5E-01	352	
5.5	"	25086	1	1857	23229	4.5E-01	449	
6	"	28238	1	1857	26381	5.1E-01	510	
6.5	"	4623	1	1857	2766	5.3E-02	53	
7	"	13786	1	1857	11929	2.3E-01	231	
7.5	"	17087	1	1857	15230	2.9E-01	294	
8	"	15629	1	1857	13772	2.7E-01	266	
8.5	"	18595	1	1857	16738	3.2E-01	324	
9	"	18183	1	1857	16326	3.2E-01	316	
9.5	"	13914	1	1857	12057	2.3E-01	233	
10	"	4862	1	1857	3005	5.8E-02	58	
10.5	"	3515	1	1857	1658	3.2E-02	32	
11	"	2531	1	1857	674	1.3E-02	13	
11.5	"	2241	1	1857	384	7.4E-03	7	
12	"	2002	1	1857	145	2.8E-03	Activity is below LD	
12.5	"	2168	1	1857	311	6.0E-03	6	
13	"	1978	1	1857	121	2.3E-03	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/17/97	Time:	1245	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1507	23.1	2702
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 3.93 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	1907	1	1857	50	9.7E-04	Activity is below LD	
14	"	1788	1	1857	-69	0.0E+00	Activity is below LD	
14.5	"	2016	1	1857	159	3.1E-03	Activity is below LD	
15	"	2494	1	1857	637	1.2E-02	12	
15.5	"	2292	1	1857	435	8.4E-03	8	
16	"	2196	1	1857	339	6.6E-03	7	
16.5	"	3465	1	1857	1608	3.1E-02	31	
17	"	4488	1	1857	2631	5.1E-02	51	
17.5	"	8497	1	1857	6640	1.3E-01	128	
18	"	9436	1	1857	7579	1.5E-01	147	
18.5	"	5216	1	1857	3359	6.5E-02	65	
19	"	4450	1	1857	2593	5.0E-02	50	
19.5	"	7431	1	1857	5574	1.1E-01	108	
20	"	9005	1	1857	7148	1.4E-01	138	
20.5	"	7937	1	1857	6080	1.2E-01	118	
21	"	6414	1	1857	4557	8.8E-02	88	
21.5	"	4811	1	1857	2954	5.7E-02	57	
22	"	6025	1	1857	4168	8.1E-02	81	
22.5	"	3474	1	1857	1617	3.1E-02	31	
23	"	6715	1	1857	4858	9.4E-02	94	
23.5	"	6980	1	1857	5123	9.9E-02	99	
24	"	9803	1	1857	7946	1.5E-01	154	
24.5	"	16134	1	1857	14277	2.8E-01	276	
25	"	9539	1	1857	7682	1.5E-01	148	
25.5	"	8532	1	1857	6675	1.3E-01	129	
26	"	8419	1	1857	6562	1.3E-01	127	
26.5	"	14782	1	1857	12925	2.5E-01	250	

New World Technology Radiological Survey Report

Date:	12/17/97	Time:	1245	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 203 cpm L_D : 3.93 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1507	23.1	2702
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	11604	1	1857	9747	1.9E-01	188	
27.5	"	9451	1	1857	7594	1.5E-01	147	
28	"	6638	1	1857	4781	9.2E-02	92	
28.5	"	11600	1	1857	9743	1.9E-01	188	
29	"	14955	1	1857	13098	2.5E-01	253	
29.5	"	9305	1	1857	7448	1.4E-01	144	
30	"	10688	1	1857	8831	1.7E-01	171	
30.5	"	7897	1	1857	6040	1.2E-01	117	
31	"	7174	1	1857	5317	1.0E-01	103	
31.5	"	9558	1	1857	7701	1.5E-01	149	
32	"	10552	1	1857	8695	1.7E-01	168	
32.5	"	11000	1	1857	9143	1.8E-01	177	
33	"	10604	1	1857	8747	1.7E-01	169	
33.5	"	7332	1	1857	5475	1.1E-01	106	
34	"	3101	1	1857	1244	2.4E-02	24	
34.5	"	2869	1	1857	1012	2.0E-02	20	
35	"	8770	1	1857	6913	1.3E-01	134	
35.5	"	25481	1	1857	23624	4.6E-01	457	
36	"	19033	1	1857	17176	3.3E-01	332	
36.5	"	11299	1	1857	9442	1.8E-01	183	
37	"	8662	1	1857	6805	1.3E-01	132	
37.5	"	8909	1	1857	7052	1.4E-01	136	
38	"	11848	1	1857	9991	1.9E-01	193	
38.5	"	7000	1	1857	5143	9.9E-02	99	
39	"	10886	1	1857	9029	1.7E-01	175	
39.5	"	7492	1	1857	5635	1.1E-01	109	
40	"	9435	1	1857	7578	1.5E-01	146	

New World Technology Radiological Survey Report

Date:	12/17/97	Time:	1245	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D : 203 cpm L_D : 3.93 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1507	23.1	2702
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	12026	1	1857	10169	2.0E-01	197	
41	"	10087	1	1857	8230	1.6E-01	159	
41.5	"	9630	1	1857	7773	1.5E-01	150	
42	"	9134	1	1857	7277	1.4E-01	141	
42.5	"	8965	1	1857	7108	1.4E-01	137	
43	"	16254	1	1857	14397	2.8E-01	278	
43.5	"	14544	1	1857	12687	2.5E-01	245	
44	"	13345	1	1857	11488	2.2E-01	222	
44.5	"	12841	1	1857	10984	2.1E-01	212	
45	"	7424	1	1857	5567	1.1E-01	108	
45.5	"	11189	1	1857	9332	1.8E-01	180	
46	"	7681	1	1857	5824	1.1E-01	113	
46.5	"	5174	1	1857	3317	6.4E-02	64	
47	"	7831	1	1857	5974	1.2E-01	115	
47.5	"	5036	1	1857	3179	6.1E-02	61	
48	"	6536	1	1857	4679	9.0E-02	90	
48.5	"	5087	1	1857	3230	6.2E-02	62	
49	"	7619	1	1857	5762	1.1E-01	111	
49.5	"	7164	1	1857	5307	1.0E-01	103	
50	"	3263	1	1857	1406	2.7E-02	27	
50.5	"	8958	1	1857	7101	1.4E-01	137	
51	"	11963	1	1857	10106	2.0E-01	195	
51.5	"	11631	1	1857	9774	1.9E-01	189	
52	"	12147	1	1857	10290	2.0E-01	199	
52.5	"	8441	1	1857	6584	1.3E-01	127	
53	"	3953	1	1857	2096	4.1E-02	41	
53.5	"	3591	1	1857	1734	3.4E-02	34	

New World Technology Radiological Survey Report

Date:	12/17/97	Time:	1245	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.023

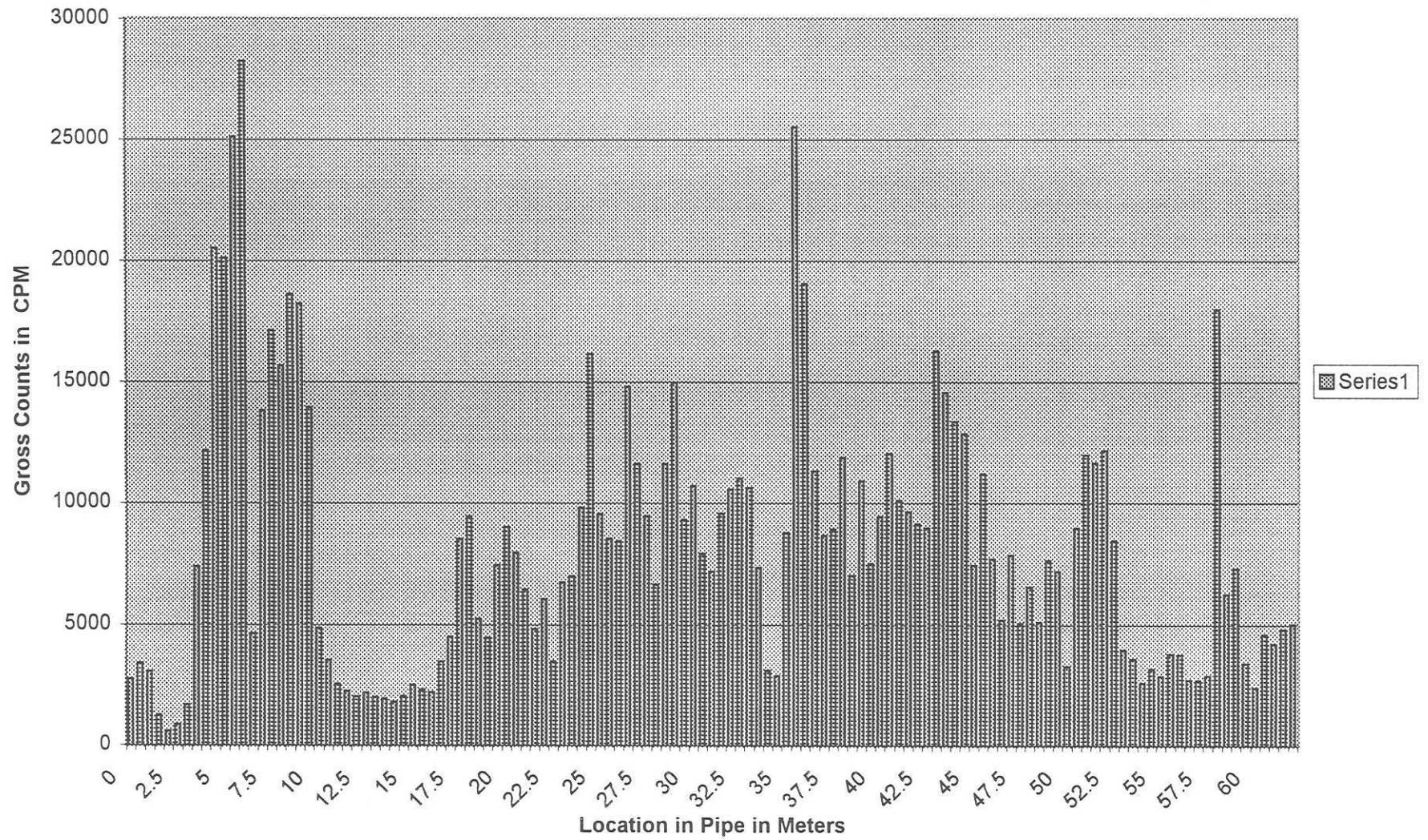
Net counts for L_D : 203 cpm L_D : 3.93 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1507	23.1	2702
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2587	1	1857	730	1.4E-02	14	
54.5	"	3151	1	1857	1294	2.5E-02	25	
55	"	2863	1	1857	1006	1.9E-02	19	
55.5	"	3772	1	1857	1915	3.7E-02	37	
56	"	3762	1	1857	1905	3.7E-02	37	
56.5	"	2701	1	1857	844	1.6E-02	16	
57	"	2679	1	1857	822	1.6E-02	16	
57.5	"	2867	1	1857	1010	2.0E-02	20	
58	"	17943	1	1857	16086	3.1E-01	311	
58.5	"	6237	1	1857	4380	8.5E-02	85	
59	"	7283	1	1857	5426	1.0E-01	105	
59.5	"	3396	1	1857	1539	3.0E-02	30	
60	"	2393	1	1857	536	1.0E-02	10	
60.5	"	4597	1	1857	2740	5.3E-02	53	
61	"	4212	1	1857	2355	4.6E-02	46	
61.5	"	4783	1	1857	2926	5.7E-02	57	
62	"	4994	1	1857	3137	6.1E-02	61	

Figure F-2F Survey Results from Manhole F to Manhoe 2F



New World Technology Radiological Survey Report

Date:	12/18/97	Time:	O700	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 CPM L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1460	23.1	2604	
I/S Pipe Background		1857	CPM
I/S M/H Backgroun		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
62.5	I/S Pipe	1388	1	1857	-469	0.0E+00	Activity is below LD	
63	"	1430	1	1857	-427	0.0E+00	Activity is below LD	
63.5	"	1103	1	1857	-754	0.0E+00	Activity is below LD	
64	"	1465	1	1857	-392	0.0E+00	Activity is below LD	
64.5	"	1453	1	1857	-404	0.0E+00	Activity is below LD	
65	"	1383	1	1857	-474	0.0E+00	Activity is below LD	
65.5	"	1425	1	1857	-432	0.0E+00	Activity is below LD	
66	"	1338	1	1857	-519	0.0E+00	Activity is below LD	
66.5	"	1732	1	1857	-125	0.0E+00	Activity is below LD	
67	"	1880	1	1857	23	4.6E-04	Activity is below LD	
67.5	"	1688	1	1857	-169	0.0E+00	Activity is below LD	
68	"	3171	1	1857	1314	2.7E-02	27	
68.5	"	5637	1	1857	3780	7.6E-02	76	
69	"	7365	1	1857	5508	1.1E-01	111	
69.5	"	10955	1	1857	9098	1.8E-01	184	
70	"	12008	1	1857	10151	2.0E-01	205	
70.5	"	8068	1	1857	6211	1.3E-01	125	
71	"	9281	1	1857	7424	1.5E-01	150	
71.5	"	8437	1	1857	6580	1.3E-01	133	
72	"	2040	1	1857	183	3.7E-03	Activity is below LD	
72.5	"	3164	1	1857	1307	2.6E-02	26	
73	"	3196	1	1857	1339	2.7E-02	27	
73.5	"	3189	1	1857	1332	2.7E-02	27	
74	"	3589	1	1857	1732	3.5E-02	35	
74.5	"	5498	1	1857	3641	7.4E-02	74	
75	"	3554	1	1857	1697	3.4E-02	34	
75.5	"	3350	1	1857	1493	3.0E-02	30	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	O700	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 CPM

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 4.10 nCi 0.0041 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
76	"	3314	1	1857	1457	2.9E-02	29	
76.5	"	1965	1	1857	108	2.2E-03	Activity is below LD	
77	"	2004	1	1857	147	3.0E-03	Activity is below LD	
77.5	"	1489	1	1857	-368	0.0E+00	Activity is below LD	
78	"	1489	1	1857	-368	0.0E+00	Activity is below LD	
78.5	"	1592	1	1857	-265	0.0E+00	Activity is below LD	
79	"	1518	1	1857	-339	0.0E+00	Activity is below LD	
79.5	"	1452	1	1857	-405	0.0E+00	Activity is below LD	
80	"	1536	1	1857	-321	0.0E+00	Activity is below LD	
80.5	"	1488	1	1857	-369	0.0E+00	Activity is below LD	
81	"	1755	1	1857	-102	0.0E+00	Activity is below LD	
81.5	"	2476	1	1857	619	1.2E-02	12	
82	"	3267	1	1857	1410	2.8E-02	28	
82.5	"	3770	1	1857	1913	3.9E-02	39	
83	"	12446	1	1857	10589	2.1E-01	214	
83.5	"	11254	1	1857	9397	1.9E-01	190	
84	"	8788	1	1857	6931	1.4E-01	140	
84.5	"	7662	1	1857	5805	1.2E-01	117	
85	"	6281	1	1857	4424	8.9E-02	89	
85.5	"	12975	1	1857	11118	2.2E-01	224	
86	"	18670	1	1857	16813	3.4E-01	339	
86.5	"	17525	1	1857	15668	3.2E-01	316	
87	"	12413	1	1857	10556	2.1E-01	213	
87.5	"	14288	1	1857	12431	2.5E-01	251	
88	"	14256	1	1857	12399	2.5E-01	250	
88.5	"	15281	1	1857	13424	2.7E-01	271	
89	"	12585	1	1857	10728	2.2E-01	217	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	O700	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_p : 203 CPM L_p : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Backgroun		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
89.5	"	7292	1	1857	5435	1.1E-01	110	
90	"	9021	1	1857	7164	1.4E-01	145	
90.5	"	7781	1	1857	5924	1.2E-01	120	
91.5	"	4365	1	1857	2508	5.1E-02	51	
92	"	3804	1	1857	1947	3.9E-02	39	
92.5	"	5930	1	1857	4073	8.2E-02	82	
93	"	6574	1	1857	4717	9.5E-02	95	
93.5	"	9128	1	1857	7271	1.5E-01	147	
94	"	6745	1	1857	4888	9.9E-02	99	
94.5	"	5087	1	1857	3230	6.5E-02	65	
95	"	5834	1	1857	3977	8.0E-02	80	
95.5	"	7715	1	1857	5858	1.2E-01	118	
96	"	11836	1	1857	9979	2.0E-01	201	
96.5	"	15026	1	1857	13169	2.7E-01	266	
97	"	16028	1	1857	14171	2.9E-01	286	
97.5	"	15755	1	1857	13898	2.8E-01	281	
98	"	16399	1	1857	14542	2.9E-01	294	
98.5	"	14272	1	1857	12415	2.5E-01	251	
99	"	13049	1	1857	11192	2.3E-01	226	
99.5	"	13024	1	1857	11167	2.3E-01	225	
100	"	11345	1	1857	9488	1.9E-01	192	
100.5	"	12707	1	1857	10850	2.2E-01	219	
101	"	11247	1	1857	9390	1.9E-01	190	
101.5	"	5711	1	1857	3854	7.8E-02	78	
102	"	4765	1	1857	2908	5.9E-02	59	
102.5	"	6542	1	1857	4685	9.5E-02	95	
103	"	12110	1	1857	10253	2.1E-01	207	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	0700	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 CPM L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
103.5	"	14931	1	1857	13074	2.6E-01	264	
104	"	13508	1	1857	11651	2.4E-01	235	
104.5	"	7549	1	1857	5692	1.1E-01	115	
105	"	8432	1	1857	6575	1.3E-01	133	
105.5	"	11965	1	1857	10108	2.0E-01	204	
106	"	7208	1	1857	5351	1.1E-01	108	
106.5	"	7029	1	1857	5172	1.0E-01	104	
107	"	10996	1	1857	9139	1.8E-01	185	
107.5	"	12554	1	1857	10697	2.2E-01	216	
108	"	7886	1	1857	6029	1.2E-01	122	
108.5	"	6029	1	1857	4172	8.4E-02	84	
109	"	6843	1	1857	4986	1.0E-01	101	
109.5	"	7029	1	1857	5172	1.0E-01	104	
110	"	7413	1	1857	5556	1.1E-01	112	
110.5	"	5425	1	1857	3568	7.2E-02	72	
111	"	7170	1	1857	5313	1.1E-01	107	
111.5	"	11728	1	1857	9871	2.0E-01	199	
112	"	17264	1	1857	15407	3.1E-01	311	
112.5	"	14949	1	1857	13092	2.6E-01	264	
113	"	17970	1	1857	16113	3.3E-01	325	
113.5	"	19948	1	1857	18091	3.7E-01	365	
114	"	17401	1	1857	15544	3.1E-01	314	
114.5	"	19474	1	1857	17617	3.6E-01	356	
115	"	15178	1	1857	13321	2.7E-01	269	
115.5	"	12280	1	1857	10423	2.1E-01	210	
116	"	13971	1	1857	12114	2.4E-01	245	
116.5	"	14549	1	1857	12692	2.6E-01	256	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	O700	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole F to Man Hole 2F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

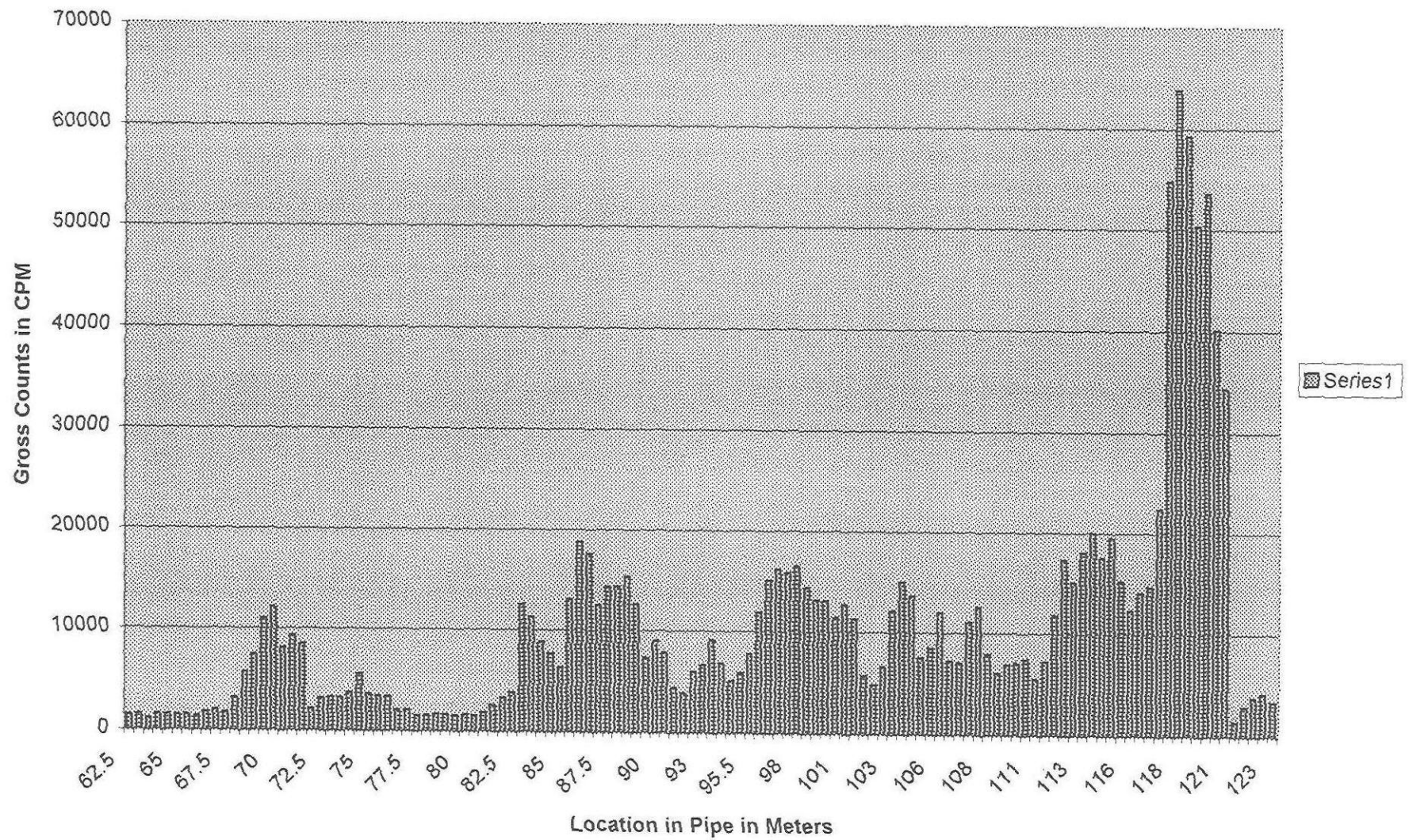
Net counts for L_D : 203 CPM L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
117	"	22380	1	1857	20523	4.1E-01	414	
117.5	"	54759	1	1857	52902	1.1E+00	1068	
118	"	63753	1	1857	61896	1.2E+00	1250	
118.5	"	59143	1	1857	57286	1.2E+00	1157	
119	"	50328	1	1857	48471	9.8E-01	979	
119.5	"	53504	1	1857	51647	1.0E+00	1043	
120	"	40101	1	1857	38244	7.7E-01	772	
120.5	"	34295	1	1857	32438	6.5E-01	655	
121	Bottom of M/H	1426	1	3237	-1811	0.0E+00	Activity is below LD	
121.5	"	2858	1	3237	-379	0.0E+00	Activity is below LD	
122	"	3741	1	3237	504	1.0E-02	10	
122.5	"	4171	1	3237	934	1.9E-02	19	
123	Plane of M/H	3377	1	3237	140	2.8E-03	Activity is below LD	

Figure F-2F-1 Survey Results from Manhole F to Manhole 2F



New World Technology Radiological Survey Report

Page 1 of 10

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1460	23.1	2604	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	3377	1	3237	140	2.8E-03	Activity is below LD	
0.5	I/S Manhole	4171	1	3237	934	1.9E-02	19	
1	"	3741	1	3237	504	1.0E-02	10	
1.5	"	2858	1	3237	-379	0.0E+00	Activity is below LD	
2	"	1426	1	3237	-1811	0.0E+00	Activity is below LD	
2.5	I/S Pipe	1698	1	1857	-159	0.0E+00	Activity is below LD	
3	"	42166	1	1857	40309	8.1E-01	814	
3.5	"	94663	1	1857	92806	1.9E+00	1874	
4	"	60949	1	1857	59092	1.2E+00	1193	
4.5	"	30121	1	1857	28264	5.7E-01	571	
5	"	22237	1	1857	20380	4.1E-01	412	
5.5	"	17731	1	1857	15874	3.2E-01	321	
6	"	26946	1	1857	25089	5.1E-01	507	
6.5	"	22479	1	1857	20622	4.2E-01	416	
7	"	16578	1	1857	14721	3.0E-01	297	
7.5	"	11435	1	1857	9578	1.9E-01	193	
8	"	7148	1	1857	5291	1.1E-01	107	
8.5	"	6400	1	1857	4543	9.2E-02	92	
9	"	11393	1	1857	9536	1.9E-01	193	
9.5	"	20384	1	1857	18527	3.7E-01	374	
10	"	7296	1	1857	5439	1.1E-01	110	
10.5	"	19156	1	1857	17299	3.5E-01	349	
11	"	15370	1	1857	13513	2.7E-01	273	
11.5	"	12234	1	1857	10377	2.1E-01	210	
12	"	9679	1	1857	7822	1.6E-01	158	
12.5	"	3751	1	1857	1894	3.8E-02	38	
13	"	3521	1	1857	1664	3.4E-02	34	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date	Bkrd CPM	Source (nCi)	Source CPM	
1	Ludlum 2350-1	142501	12/4/98	1460	23.1	2604	
2	44-2 1x1 NaI	PR147392	12/4/98	I/S Pipe Background		1857	CPM
				I/S M/H Background		3237	CPM
Sample Count Time: 1 minutes							
Efficiency: 0.022							
Net counts for L _p : 203 cpm				L _p : 4.10 nCi	0.0041	μCi	

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
13.5	"	6179	1	1857	4322	8.7E-02	87	
14	"	6456	1	1857	4599	9.3E-02	93	
14.5	"	9683	1	1857	7826	1.6E-01	158	
15	"	8299	1	1857	6442	1.3E-01	130	
15.5	"	12098	1	1857	10241	2.1E-01	207	
16	"	9868	1	1857	8011	1.6E-01	162	
16.5	"	7423	1	1857	5566	1.1E-01	112	
17	"	12650	1	1857	10793	2.2E-01	218	
17.5	"	13372	1	1857	11515	2.3E-01	233	
18	"	9692	1	1857	7835	1.6E-01	158	
18.5	"	9348	1	1857	7491	1.5E-01	151	
19	"	5794	1	1857	3937	7.9E-02	79	
19.5	"	9689	1	1857	7832	1.6E-01	158	
20	"	5391	1	1857	3534	7.1E-02	71	
20.5	"	2565	1	1857	708	1.4E-02	14	
21	"	4824	1	1857	2967	6.0E-02	60	
21.5	"	4645	1	1857	2788	5.6E-02	56	
22	"	7558	1	1857	5701	1.2E-01	115	
22.5	"	6273	1	1857	4416	8.9E-02	89	
23	"	4561	1	1857	2704	5.5E-02	55	
23.5	"	3535	1	1857	1678	3.4E-02	34	
24	"	2527	1	1857	670	1.4E-02	14	
24.5	"	3608	1	1857	1751	3.5E-02	35	
25	"	3817	1	1857	1960	4.0E-02	40	
25.5	"	5956	1	1857	4099	8.3E-02	83	
26	"	6323	1	1857	4466	9.0E-02	90	
26.5	"	5680	1	1857	3823	7.7E-02	77	

New World Technology Radiological Survey Report

Page 3 of 10

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1460	23.1	2604	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	7120	1	1857	5263	1.1E-01	106	
27.5	"	7204	1	1857	5347	1.1E-01	108	
28	"	15072	1	1857	13215	2.7E-01	267	
28.5	"	14603	1	1857	12746	2.6E-01	257	
29	"	10337	1	1857	8480	1.7E-01	171	
29.5	"	8675	1	1857	6818	1.4E-01	138	
30	"	17808	1	1857	15951	3.2E-01	322	
30.5	"	13158	1	1857	11301	2.3E-01	228	
31	"	8314	1	1857	6457	1.3E-01	130	
31.5	"	4316	1	1857	2459	5.0E-02	50	
32	"	4659	1	1857	2802	5.7E-02	57	
32.5	"	4949	1	1857	3092	6.2E-02	62	
33	"	4013	1	1857	2156	4.4E-02	44	
33.5	"	4431	1	1857	2574	5.2E-02	52	
34	"	4020	1	1857	2163	4.4E-02	44	
34.5	"	6096	1	1857	4239	8.6E-02	86	
35	"	5241	1	1857	3384	6.8E-02	68	
35.5	"	3183	1	1857	1326	2.7E-02	27	
36	"	3188	1	1857	1331	2.7E-02	27	
36.5	"	2798	1	1857	941	1.9E-02	19	
37	"	3630	1	1857	1773	3.6E-02	36	
37.5	"	4158	1	1857	2301	4.6E-02	46	
38	"	3916	1	1857	2059	4.2E-02	42	
38.5	"	3965	1	1857	2108	4.3E-02	43	
39	"	3050	1	1857	1193	2.4E-02	24	
39.5	"	2656	1	1857	799	1.6E-02	16	
40	"	4737	1	1857	2880	5.8E-02	58	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	4242	1	1857	2385	4.8E-02	48	
41	"	3430	1	1857	1573	3.2E-02	32	
41.5	"	2865	1	1857	1008	2.0E-02	20	
42	"	2391	1	1857	534	1.1E-02	11	
42.5	"	3309	1	1857	1452	2.9E-02	29	
43	"	6298	1	1857	4441	9.0E-02	90	
43.5	"	3673	1	1857	1816	3.7E-02	37	
44	"	3297	1	1857	1440	2.9E-02	29	
44.5	"	2386	1	1857	529	1.1E-02	11	
45	"	1952	1	1857	95	1.9E-03	Activity is below LD	
45.5	"	1696	1	1857	-161	0.0E+00	Activity is below LD	
46	"	1612	1	1857	-245	0.0E+00	Activity is below LD	
46.5	"	1600	1	1857	-257	0.0E+00	Activity is below LD	
47	"	1505	1	1857	-352	0.0E+00	Activity is below LD	
47.5	"	1568	1	1857	-289	0.0E+00	Activity is below LD	
48	"	1608	1	1857	-249	0.0E+00	Activity is below LD	
48.5	"	2197	1	1857	340	6.9E-03	7	
49	"	1824	1	1857	-33	0.0E+00	Activity is below LD	
49.5	"	1734	1	1857	-123	0.0E+00	Activity is below LD	
50	"	1654	1	1857	-203	0.0E+00	Activity is below LD	
50.5	"	1117	1	1857	-740	0.0E+00	Activity is below LD	
51	"	1765	1	1857	-92	0.0E+00	Activity is below LD	
51.5	"	1811	1	1857	-46	0.0E+00	Activity is below LD	
52	"	1732	1	1857	-125	0.0E+00	Activity is below LD	
52.5	"	1608	1	1857	-249	0.0E+00	Activity is below LD	
53	"	1735	1	1857	-122	0.0E+00	Activity is below LD	
53.5	"	2169	1	1857	312	6.3E-03	6	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	6999	1	1857	5142	1.0E-01	104	
54.5	"	6664	1	1857	4807	9.7E-02	97	
55	"	6702	1	1857	4845	9.8E-02	98	
55.5	"	6129	1	1857	4272	8.6E-02	86	
56	"	5415	1	1857	3558	7.2E-02	72	
56.5	"	2677	1	1857	820	1.7E-02	17	
57	"	1814	1	1857	-43	0.0E+00	Activity is below LD	
57.5	"	2039	1	1857	182	3.7E-03	Activity is below LD	
58	"	2240	1	1857	383	7.7E-03	8	
58.5	"	2593	1	1857	736	1.5E-02	15	
59	"	2832	1	1857	975	2.0E-02	20	
59.5	"	2056	1	1857	199	4.0E-03	Activity is below LD	
60	"	2137	1	1857	280	5.7E-03	6	
60.5	"	1959	1	1857	102	2.1E-03	Activity is below LD	
61	"	1873	1	1857	16	3.2E-04	Activity is below LD	
61.5	"	2116	1	1857	259	5.2E-03	5	
62	"	2841	1	1857	984	2.0E-02	20	
62.5	"	2981	1	1857	1124	2.3E-02	23	
63	"	1818	1	1857	-39	0.0E+00	Activity is below LD	
63.5	"	2331	1	1857	474	9.6E-03	10	
64	"	1733	1	1857	-124	0.0E+00	Activity is below LD	
64.5	"	1070	1	1857	-787	0.0E+00	Activity is below LD	
65	"	1659	1	1857	-198	0.0E+00	Activity is below LD	
65.5	"	1893	1	1857	36	7.3E-04	Activity is below LD	
66	"	1699	1	1857	-158	0.0E+00	Activity is below LD	
66.5	"	1675	1	1857	-182	0.0E+00	Activity is below LD	
67	"	1723	1	1857	-134	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203

cpm

L_D : 4.10 nCi

0.0041

μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1460	23.1	2604	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	1834	1	1857	-23	0.0E+00	Activity is below LD	
68	"	1609	1	1857	-248	0.0E+00	Activity is below LD	
68.5	"	1609	1	1857	-248	0.0E+00	Activity is below LD	
69	"	1438	1	1857	-419	0.0E+00	Activity is below LD	
69.5	"	1604	1	1857	-253	0.0E+00	Activity is below LD	
70	"	1678	1	1857	-179	0.0E+00	Activity is below LD	
70.5	"	1614	1	1857	-243	0.0E+00	Activity is below LD	
71	"	1773	1	1857	-84	0.0E+00	Activity is below LD	
71.5	"	1829	1	1857	-28	0.0E+00	Activity is below LD	
72	"	2136	1	1857	279	5.6E-03	6	
72.5	"	2087	1	1857	230	4.6E-03	5	
73	"	1925	1	1857	68	1.4E-03	Activity is below LD	
73.5	"	2027	1	1857	170	3.4E-03	Activity is below LD	
74	"	1778	1	1857	-79	0.0E+00	Activity is below LD	
74.5	"	1352	1	1857	-505	0.0E+00	Activity is below LD	
75	"	1514	1	1857	-343	0.0E+00	Activity is below LD	
75.5	"	1466	1	1857	-391	0.0E+00	Activity is below LD	
76	"	1471	1	1857	-386	0.0E+00	Activity is below LD	
76.5	"	1471	1	1857	-386	0.0E+00	Activity is below LD	
77	"	1572	1	1857	-285	0.0E+00	Activity is below LD	
77.5	"	1398	1	1857	-459	0.0E+00	Activity is below LD	
78	"	1454	1	1857	-403	0.0E+00	Activity is below LD	
78.5	"	1428	1	1857	-429	0.0E+00	Activity is below LD	
79	"	1386	1	1857	-471	0.0E+00	Activity is below LD	
79.5	"	1325	1	1857	-532	0.0E+00	Activity is below LD	
80	"	1468	1	1857	-389	0.0E+00	Activity is below LD	
80.5	"	1570	1	1857	-287	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1460	23.1	2604	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
81	"	2422	1	1857	565	1.1E-02	11	
81.5	"	2987	1	1857	1130	2.3E-02	23	
82	"	4346	1	1857	2489	5.0E-02	50	
82.5	"	6230	1	1857	4373	8.8E-02	88	
83	"	3050	1	1857	1193	2.4E-02	24	
83.5	"	1874	1	1857	17	3.4E-04	Activity is below LD	
84	"	1705	1	1857	-152	0.0E+00	Activity is below LD	
84.5	"	1731	1	1857	-126	0.0E+00	Activity is below LD	
85	"	2048	1	1857	191	3.9E-03	Activity is below LD	
85.5	"	2057	1	1857	200	4.0E-03	Activity is below LD	
86	"	1825	1	1857	-32	0.0E+00	Activity is below LD	
86.5	"	1495	1	1857	-362	0.0E+00	Activity is below LD	
87	"	1199	1	1857	-658	0.0E+00	Activity is below LD	
87.5	"	1241	1	1857	-616	0.0E+00	Activity is below LD	
88	"	1101	1	1857	-756	0.0E+00	Activity is below LD	
88.5	"	1713	1	1857	-144	0.0E+00	Activity is below LD	
89	"	1877	1	1857	20	4.0E-04	Activity is below LD	
89.5	"	3446	1	1857	1589	3.2E-02	32	
90	"	4821	1	1857	2964	6.0E-02	60	
90.5	"	3700	1	1857	1843	3.7E-02	37	
91	"	4597	1	1857	2740	5.5E-02	55	
91.5	"	4983	1	1857	3126	6.3E-02	63	
92	"	4138	1	1857	2281	4.6E-02	46	
92.5	"	7720	1	1857	5863	1.2E-01	118	
93	"	7640	1	1857	5783	1.2E-01	117	
93.5	"	5674	1	1857	3817	7.7E-02	77	
94	"	6272	1	1857	4415	8.9E-02	89	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 4.10 nCi 0.0041 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
94.5	"	3894	1	1857	2037	4.1E-02	41	
95	"	4813	1	1857	2956	6.0E-02	60	
95.5	"	5387	1	1857	3530	7.1E-02	71	
96	"	4100	1	1857	2243	4.5E-02	45	
96.5	"	4794	1	1857	2937	5.9E-02	59	
97	"	3677	1	1857	1820	3.7E-02	37	
97.5	"	2774	1	1857	917	1.9E-02	19	
98	"	3112	1	1857	1255	2.5E-02	25	
98.5	"	2482	1	1857	625	1.3E-02	13	
99	"	2411	1	1857	554	1.1E-02	11	
99.5	"	2661	1	1857	804	1.6E-02	16	
100	"	2649	1	1857	792	1.6E-02	16	
110.5	"	2410	1	1857	553	1.1E-02	11	
111	"	3123	1	1857	1266	2.6E-02	26	
111.5	"	4073	1	1857	2216	4.5E-02	45	
112	"	3469	1	1857	1612	3.3E-02	33	
112.5	"	2596	1	1857	739	1.5E-02	15	
113	"	1694	1	1857	-163	0.0E+00	Activity is below LD	
113.5	"	1970	1	1857	113	2.3E-03	Activity is below LD	
114	"	1768	1	1857	-89	0.0E+00	Activity is below LD	
114.5	"	1832	1	1857	-25	0.0E+00	Activity is below LD	
115	"	1832	1	1857	-25	0.0E+00	Activity is below LD	
115.5	"	2453	1	1857	596	1.2E-02	12	
116	"	3291	1	1857	1434	2.9E-02	29	
116.5	"	2979	1	1857	1122	2.3E-02	23	
117	"	2654	1	1857	797	1.6E-02	16	
117.5	"	2203	1	1857	346	7.0E-03	7	

New World Technology Radiological Survey Report

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
118	"	2394	1	1857	537	1.1E-02	11	
118.5	"	2384	1	1857	527	1.1E-02	11	
119	"	1679	1	1857	-178	0.0E+00	Activity is below LD	
9.5	"	2140	1	1857	283	5.7E-03	6	
120	"	2336	1	1857	479	9.7E-03	10	
120.5	"	2216	1	1857	359	7.2E-03	7	
121	"	1829	1	1857	-28	0.0E+00	Activity is below LD	
121.5	"	2296	1	1857	439	8.9E-03	9	
122	"	1971	1	1857	114	2.3E-03	Activity is below LD	
122.5	"	1834	1	1857	-23	0.0E+00	Activity is below LD	
123	"	2013	1	1857	156	3.2E-03	Activity is below LD	
123.5	"	2033	1	1857	176	3.6E-03	Activity is below LD	
124	"	2742	1	1857	885	1.8E-02	18	
124.5	"	2211	1	1857	354	7.1E-03	7	
125	"	2201	1	1857	344	6.9E-03	7	
125.5	"	2053	1	1857	196	4.0E-03	Activity is below LD	
126	"	2108	1	1857	251	5.1E-03	5	
126.5	"	1999	1	1857	142	2.9E-03	Activity is below LD	
127	"	2193	1	1857	336	6.8E-03	7	
127.5	"	2529	1	1857	672	1.4E-02	14	
128	"	2353	1	1857	496	1.0E-02	10	
128.5	"	2160	1	1857	303	6.1E-03	6	
129	"	1428	1	1857	-429	0.0E+00	Activity is below LD	
129.5	"	1304	1	1857	-553	0.0E+00	Activity is below LD	
130	"	1074	1	1857	-783	0.0E+00	Activity is below LD	
130.5	"	870	1	1857	-987	0.0E+00	Activity is below LD	
131	"	1030	1	1857	-827	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 10 of 10

Date:	12/18/97	Time:	1000	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 2F to Man Hole 3F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.022

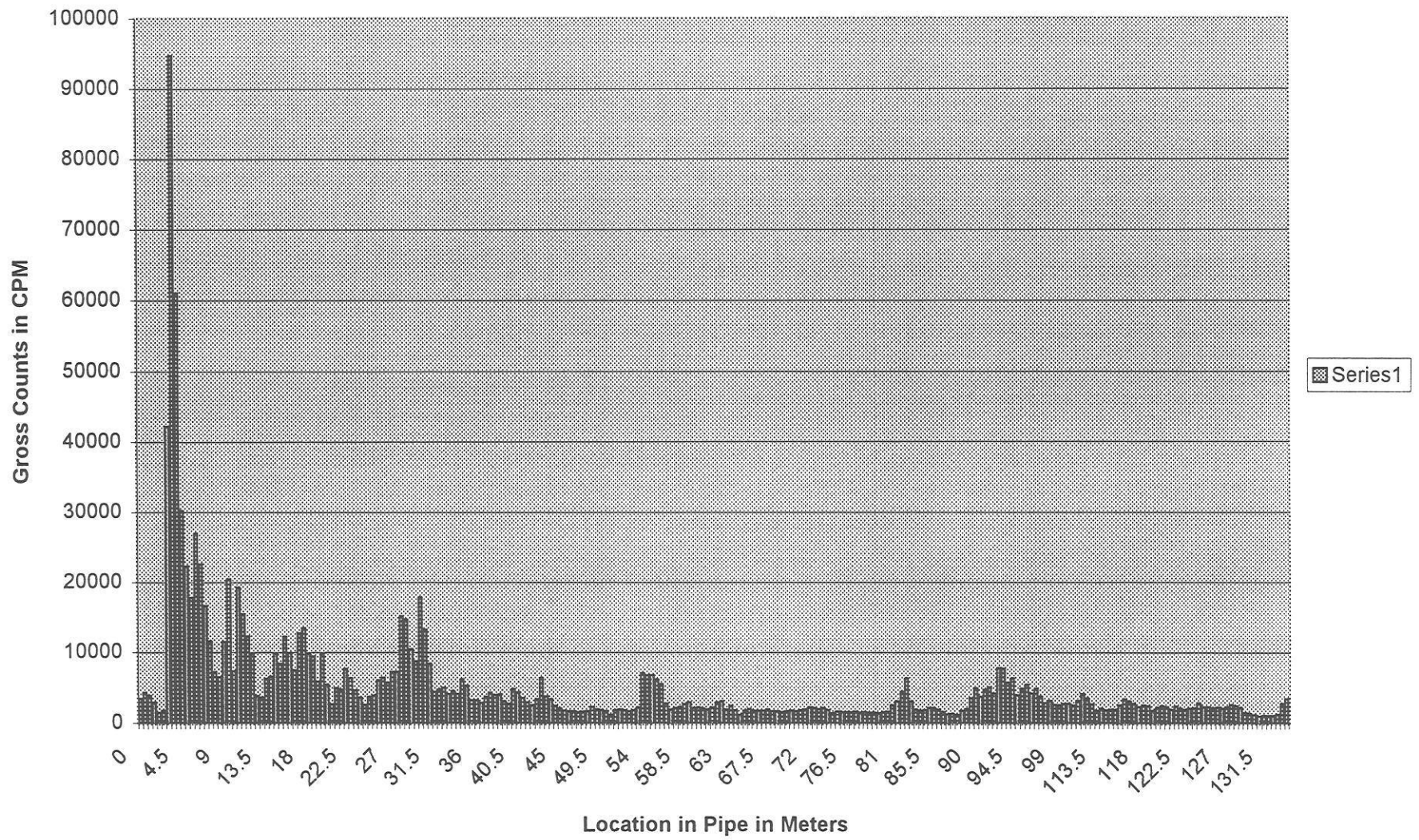
Net counts for L_D : 203 cpm L_D : 4.10 nCi 0.0041 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1460	23.1	2604
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
131.5	Bottom of M/H	967	1	3237	-2270	0.0E+00	Activity is below LD	
132	Inside M/H	967	1	3237	-2270	0.0E+00	Activity is below LD	
132.5	"	1161	1	3237	-2076	0.0E+00	Activity is below LD	
133	"	2641	1	3237	-596	0.0E+00	Activity is below LD	
133.5	Plane of M/H	3372	1	3237	135	2.7E-03	Activity is below LD	

Figure 2F-3F Survey Results from Mahnole 2F to Manhole 3F



New World Technology Radiological Survey Report

Page 1 of 6

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.91 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
987	23.1	2201	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	2869	1	2528	341	6.5E-03	6	
0.5	I/S Manhole	3333	1	2528	805	1.5E-02	15	
1	"	3334	1	2528	806	1.5E-02	15	
1.5	"	3049	1	2528	521	9.9E-03	10	
2	"	2393	1	2528	-135	0.0E+00	Activity is below LD	
2.5	I/S Pipe	2161	1	1903	258	4.9E-03	5	
3	"	1887	1	1903	-16	0.0E+00	Activity is below LD	
3.5	"	2032	1	1903	129	2.5E-03	Activity is below LD	
4	"	2081	1	1903	178	3.4E-03	Activity is below LD	
4.5	"	2398	1	1903	495	9.4E-03	9	
5	"	2333	1	1903	430	8.2E-03	8	
5.5	"	2342	1	1903	439	8.4E-03	8	
6	"	2545	1	1903	642	1.2E-02	12	
6.5	"	2518	1	1903	615	1.2E-02	12	
7	"	2361	1	1903	458	8.7E-03	9	
7.5	"	2159	1	1903	256	4.9E-03	5	
8	"	2109	1	1903	206	3.9E-03	4	
8.5	"	2187	1	1903	284	5.4E-03	5	
9	"	2207	1	1903	304	5.8E-03	6	
9.5	"	2090	1	1903	187	3.6E-03	Activity is below LD	
10	"	2251	1	1903	348	6.6E-03	7	
10.5	"	2106	1	1903	203	3.9E-03	Activity is below LD	
11	"	2103	1	1903	200	3.8E-03	Activity is below LD	
11.5	"	1968	1	1903	65	1.2E-03	Activity is below LD	
12	"	1931	1	1903	28	5.3E-04	Activity is below LD	
12.5	"	1876	1	1903	-27	0.0E+00	Activity is below LD	
13	"	2297	1	1903	394	7.5E-03	7	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm L_D : 3.91 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
987	23.1	2201
I/S Pipe Background		1903
I/S M/H Background		2528
		CPM
		CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	2297	1	1903	394	7.5E-03	7	
14	"	2224	1	1903	321	6.1E-03	6	
14.5	"	2248	1	1903	345	6.6E-03	7	
15	"	2102	1	1903	199	3.8E-03	Activity is below LD	
15.5	"	1787	1	1903	-116	0.0E+00	Activity is below LD	
16	"	1759	1	1903	-144	0.0E+00	Activity is below LD	
16.5	"	1569	1	1903	-334	0.0E+00	Activity is below LD	
17	"	1634	1	1903	-269	0.0E+00	Activity is below LD	
17.5	"	1559	1	1903	-344	0.0E+00	Activity is below LD	
18	"	1599	1	1903	-304	0.0E+00	Activity is below LD	
18.5	"	1686	1	1903	-217	0.0E+00	Activity is below LD	
19	"	1680	1	1903	-223	0.0E+00	Activity is below LD	
19.5	"	1601	1	1903	-302	0.0E+00	Activity is below LD	
20	"	1675	1	1903	-228	0.0E+00	Activity is below LD	
20.5	"	1955	1	1903	52	9.9E-04	Activity is below LD	
21	"	1760	1	1903	-143	0.0E+00	Activity is below LD	
21.5	"	1745	1	1903	-158	0.0E+00	Activity is below LD	
22	"	2005	1	1903	102	1.9E-03	Activity is below LD	
22.5	"	1937	1	1903	34	6.5E-04	Activity is below LD	
23	"	1970	1	1903	67	1.3E-03	Activity is below LD	
23.5	"	2095	1	1903	192	3.7E-03	Activity is below LD	
24	"	1884	1	1903	-19	0.0E+00	Activity is below LD	
24.5	"	1908	1	1903	5	9.5E-05	Activity is below LD	
25	"	1918	1	1903	15	2.9E-04	Activity is below LD	
25.5	"	2029	1	1903	126	2.4E-03	Activity is below LD	
26	"	2038	1	1903	135	2.6E-03	Activity is below LD	
26.5	"	1846	1	1903	-57	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM	
987	23.1	2201	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

L_D : 3.91 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2068	1	1903	165	3.1E-03	Activity is below LD	
27.5	"	2079	1	1903	176	3.3E-03	Activity is below LD	
28	"	2101	1	1903	198	3.8E-03	Activity is below LD	
28.5	"	2065	1	1903	162	3.1E-03	Activity is below LD	
29	"	2200	1	1903	297	5.7E-03	6	
29.5	"	2217	1	1903	314	6.0E-03	6	
30	"	2184	1	1903	281	5.3E-03	5	
30.5	"	2358	1	1903	455	8.7E-03	9	
31	"	2197	1	1903	294	5.6E-03	6	
31.5	"	2244	1	1903	341	6.5E-03	6	
32	"	2262	1	1903	359	6.8E-03	7	
32.5	"	2284	1	1903	381	7.2E-03	7	
33	"	2160	1	1903	257	4.9E-03	5	
33.5	"	2270	1	1903	367	7.0E-03	7	
34	"	2221	1	1903	318	6.1E-03	6	
34.5	"	2150	1	1903	247	4.7E-03	5	
35	"	2185	1	1903	282	5.4E-03	5	
35.5	"	2195	1	1903	292	5.6E-03	6	
36	"	2147	1	1903	244	4.6E-03	5	
36.5	"	2303	1	1903	400	7.6E-03	8	
37	"	2213	1	1903	310	5.9E-03	6	
37.5	"	2110	1	1903	207	3.9E-03	4	
38	"	2133	1	1903	230	4.4E-03	4	
38.5	"	2053	1	1903	150	2.9E-03	Activity is below LD	
39	"	1837	1	1903	-66	0.0E+00	Activity is below LD	
39.5	"	1859	1	1903	-44	0.0E+00	Activity is below LD	
40	"	1821	1	1903	-82	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM
987	23.1	2201
I/S Pipe Background		1903
I/S M/H Background		2528
		CPM
		CPM

L_D : 3.91 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	1860	1	1903	-43	0.0E+00	Activity is below LD	
41	"	1849	1	1903	-54	0.0E+00	Activity is below LD	
41.5	"	1879	1	1903	-24	0.0E+00	Activity is below LD	
42	"	1957	1	1903	54	1.0E-03	Activity is below LD	
42.5	"	1980	1	1903	77	1.5E-03	Activity is below LD	
43	"	1881	1	1903	-22	0.0E+00	Activity is below LD	
43.5	"	1810	1	1903	-93	0.0E+00	Activity is below LD	
44	"	1807	1	1903	-96	0.0E+00	Activity is below LD	
44.5	"	1812	1	1903	-91	0.0E+00	Activity is below LD	
45	"	1818	1	1903	-85	0.0E+00	Activity is below LD	
45.5	"	1795	1	1903	-108	0.0E+00	Activity is below LD	
46	"	1935	1	1903	32	6.1E-04	Activity is below LD	
46.5	"	1979	1	1903	76	1.4E-03	Activity is below LD	
47	"	1936	1	1903	33	6.3E-04	Activity is below LD	
47.5	"	1870	1	1903	-33	0.0E+00	Activity is below LD	
48	"	1915	1	1903	12	2.3E-04	Activity is below LD	
48.5	"	2071	1	1903	168	3.2E-03	Activity is below LD	
49	"	2025	1	1903	122	2.3E-03	Activity is below LD	
49.5	"	1960	1	1903	57	1.1E-03	Activity is below LD	
50	"	1804	1	1903	-99	0.0E+00	Activity is below LD	
50.5	"	1910	1	1903	7	1.3E-04	Activity is below LD	
51	"	1835	1	1903	-68	0.0E+00	Activity is below LD	
51.5	"	2020	1	1903	117	2.2E-03	Activity is below LD	
52	"	1780	1	1903	-123	0.0E+00	Activity is below LD	
52.5	"	1620	1	1903	-283	0.0E+00	Activity is below LD	
53	"	2080	1	1903	177	3.4E-03	Activity is below LD	
53.5	"	2067	1	1903	164	3.1E-03	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_p : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM
987	23.1	2201
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

L_D : 3.91 nCi 0.0039 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2563	1	1903	660	1.3E-02	13	
54.5	"	2188	1	1903	285	5.4E-03	5	
55	"	2213	1	1903	310	5.9E-03	6	
55.5	"	2345	1	1903	442	8.4E-03	8	
56	"	2076	1	1903	173	3.3E-03	Activity is below LD	
56.5	"	2190	1	1903	287	5.5E-03	5	
57	"	2028	1	1903	125	2.4E-03	Activity is below LD	
57.5	"	2192	1	1903	289	5.5E-03	5	
58	"	2280	1	1903	377	7.2E-03	7	
58.5	"	2041	1	1903	138	2.6E-03	Activity is below LD	
59	"	1961	1	1903	58	1.1E-03	Activity is below LD	
59.5	"	1996	1	1903	93	1.8E-03	Activity is below LD	
60	"	1992	1	1903	89	1.7E-03	Activity is below LD	
60.5	"	2120	1	1903	217	4.1E-03	4	
61	"	1986	1	1903	83	1.6E-03	Activity is below LD	
61.5	"	2076	1	1903	173	3.3E-03	Activity is below LD	
62	"	1940	1	1903	37	7.0E-04	Activity is below LD	
62.5	"	1810	1	1903	-93	0.0E+00	Activity is below LD	
63	"	1855	1	1903	-48	0.0E+00	Activity is below LD	
63.5	"	1715	1	1903	-188	0.0E+00	Activity is below LD	
64	"	1745	1	1903	-158	0.0E+00	Activity is below LD	
64.5	"	1912	1	1903	9	1.7E-04	Activity is below LD	
65	"	1645	1	1903	-258	0.0E+00	Activity is below LD	
65.5	"	1637	1	1903	-266	0.0E+00	Activity is below LD	
66	Bottom of M/H	1655	1	2528	-873	0.0E+00	Activity is below LD	
66.5	Inside M/H	1680	1	2528	-848	0.0E+00	Activity is below LD	
67	"	1723	1	2528	-805	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 6 of 6

Date:	12/19/97	Time:	1320	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F to Man Hole 4F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.024

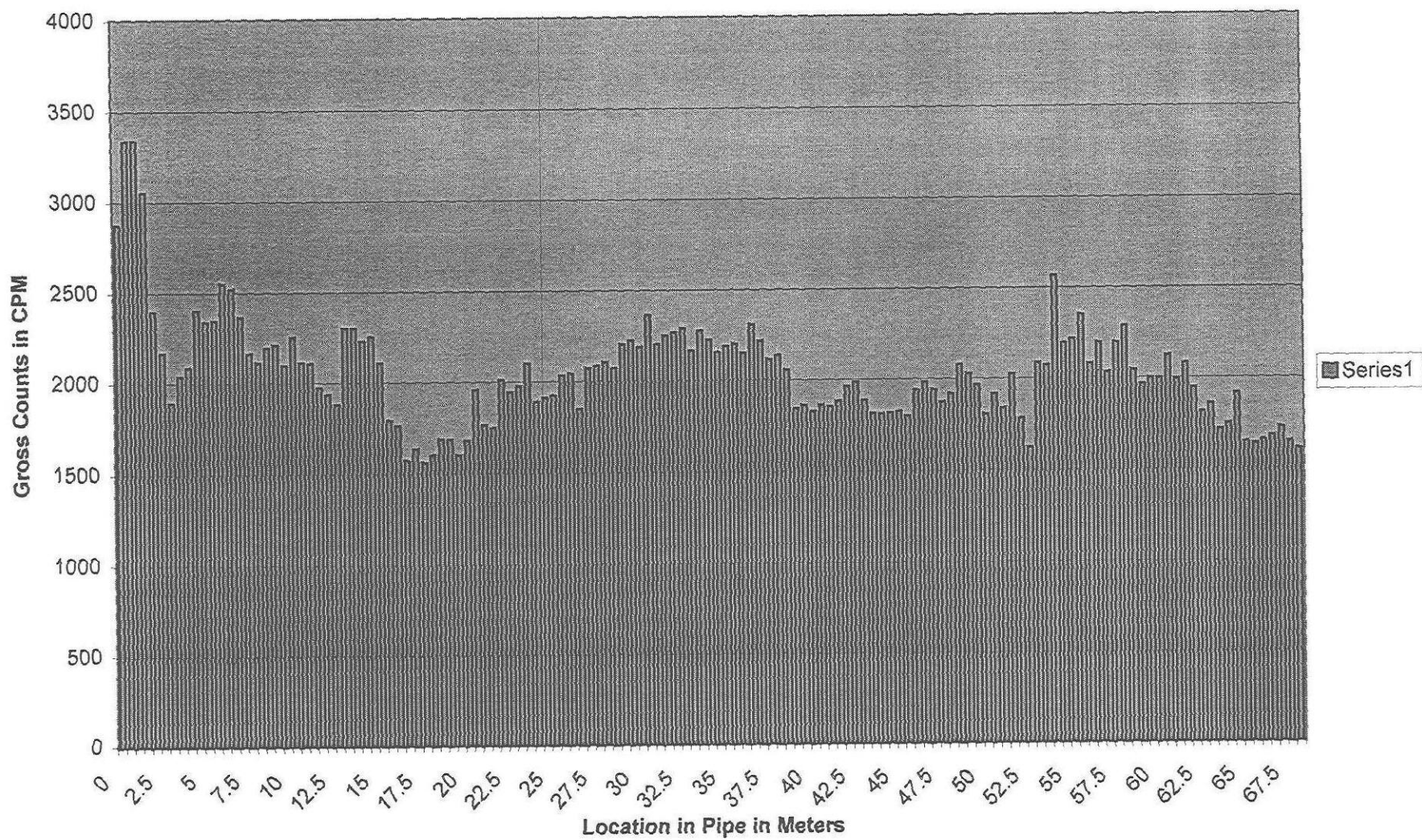
Net counts for L_D : 206 cpm L_D : 3.91 nCi 0.0039 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
987	23.1	2201	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	1649	1	2528	-879	0.0E+00	Activity is below LD	
68	Plane of M/H	1609	1	2528	-919	0.0E+00	Activity is below LD	

Figure 4F-4F1 Survey Results from Mahnole 4F to Manhole 4F1



New World Technology Radiological Survey Report

Page 1 of 7

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	3276	1	2528	748	1.4E-02	14	
0.5	I/S Manhole	3664	1	2528	1136	2.1E-02	21	
1	"	3919	1	2528	1391	2.6E-02	26	
1.5	"	4164	1	2528	1636	3.0E-02	30	
2	"	3653	1	2528	1125	2.1E-02	21	
2.5	I/S Pipe	2765	1	1903	862	1.6E-02	16	
3	"	3064	1	1903	1161	2.1E-02	21	
3.5	"	3012	1	1903	1109	2.0E-02	20	
4	"	2768	1	1903	865	1.6E-02	16	
4.5	"	2440	1	1903	537	9.9E-03	10	
5	"	3032	1	1903	1129	2.1E-02	21	
5.5	"	2436	1	1903	533	9.8E-03	10	
6	"	2501	1	1903	598	1.1E-02	11	
6.5	"	2506	1	1903	603	1.1E-02	11	
7	"	2309	1	1903	406	7.5E-03	7	
7.5	"	2303	1	1903	400	7.3E-03	7	
8	"	2286	1	1903	383	7.0E-03	7	
8.5	"	2330	1	1903	427	7.8E-03	8	
9	"	2313	1	1903	410	7.5E-03	8	
9.5	"	2304	1	1903	401	7.4E-03	7	
10	"	2161	1	1903	258	4.7E-03	5	
10.5	"	2341	1	1903	438	8.0E-03	8	
11	"	2342	1	1903	439	8.1E-03	8	
11.5	"	2369	1	1903	466	8.6E-03	9	
12	"	2439	1	1903	536	9.8E-03	10	
12.5	"	2478	1	1903	575	1.1E-02	11	
13	"	2812	1	1903	909	1.7E-02	17	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	3002	1	1903	1099	2.0E-02	20	
14	"	3559	1	1903	1656	3.0E-02	30	
14.5	"	3401	1	1903	1498	2.8E-02	28	
15	"	3907	1	1903	2004	3.7E-02	37	
15.5	"	4696	1	1903	2793	5.1E-02	51	
16	"	5459	1	1903	3556	6.5E-02	65	
16.5	"	4354	1	1903	2451	4.5E-02	45	
17	"	3383	1	1903	1480	2.7E-02	27	
17.5	"	2918	1	1903	1015	1.9E-02	19	
18	"	2597	1	1903	694	1.3E-02	13	
18.5	"	2443	1	1903	540	9.9E-03	10	
19	"	2597	1	1903	694	1.3E-02	13	
19.5	"	2702	1	1903	799	1.5E-02	15	
20	"	2656	1	1903	753	1.4E-02	14	
20.5	"	2432	1	1903	529	9.7E-03	10	
21	"	2384	1	1903	481	8.8E-03	9	
21.5	"	2323	1	1903	420	7.7E-03	8	
22	"	2397	1	1903	494	9.1E-03	9	
22.5	"	2467	1	1903	564	1.0E-02	10	
23	"	2487	1	1903	584	1.1E-02	11	
23.5	"	2584	1	1903	681	1.3E-02	13	
24	"	2422	1	1903	519	9.5E-03	10	
24.5	"	2364	1	1903	461	8.5E-03	8	
25	"	2350	1	1903	447	8.2E-03	8	
25.5	"	2330	1	1903	427	7.8E-03	8	
26	"	2269	1	1903	366	6.7E-03	7	
26.5	"	2255	1	1903	352	6.5E-03	6	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_p : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2183	1	1903	280	5.1E-03	5	
27.5	"	2176	1	1903	273	5.0E-03	5	
28	"	2370	1	1903	467	8.6E-03	9	
28.5	"	2384	1	1903	481	8.8E-03	9	
29	"	2411	1	1903	508	9.3E-03	9	
29.5	"	2353	1	1903	450	8.3E-03	8	
30	"	2335	1	1903	432	7.9E-03	8	
30.5	"	2387	1	1903	484	8.9E-03	9	
31	"	2378	1	1903	475	8.7E-03	9	
31.5	"	2399	1	1903	496	9.1E-03	9	
32	"	2343	1	1903	440	8.1E-03	8	
32.5	"	2358	1	1903	455	8.4E-03	8	
33	"	2248	1	1903	345	6.3E-03	6	
33.5	"	2342	1	1903	439	8.1E-03	8	
34	"	2278	1	1903	375	6.9E-03	7	
34.5	"	2262	1	1903	359	6.6E-03	7	
35	"	2251	1	1903	348	6.4E-03	6	
35.5	"	2445	1	1903	542	1.0E-02	10	
36	"	2505	1	1903	602	1.1E-02	11	
36.5	"	2409	1	1903	506	9.3E-03	9	
37	"	2510	1	1903	607	1.1E-02	11	
37.5	"	2572	1	1903	669	1.2E-02	12	
38	"	2690	1	1903	787	1.4E-02	14	
38.5	"	2655	1	1903	752	1.4E-02	14	
39	"	2514	1	1903	611	1.1E-02	11	
39.5	"	2522	1	1903	619	1.1E-02	11	
40	"	2411	1	1903	508	9.3E-03	9	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	2409	1	1903	506	9.3E-03	9	
41	"	2460	1	1903	557	1.0E-02	10	
41.5	"	2506	1	1903	603	1.1E-02	11	
42	"	2510	1	1903	607	1.1E-02	11	
42.5	"	2483	1	1903	580	1.1E-02	11	
43	"	2522	1	1903	619	1.1E-02	11	
43.5	"	2461	1	1903	558	1.0E-02	10	
44	"	2360	1	1903	457	8.4E-03	8	
44.5	"	2382	1	1903	479	8.8E-03	9	
45	"	2403	1	1903	500	9.2E-03	9	
45.5	"	2200	1	1903	297	5.5E-03	5	
46	"	2230	1	1903	327	6.0E-03	6	
46.5	"	2306	1	1903	403	7.4E-03	7	
47	"	2272	1	1903	369	6.8E-03	7	
47.5	"	2189	1	1903	286	5.3E-03	5	
48	"	2170	1	1903	267	4.9E-03	5	
48.5	"	2200	1	1903	297	5.5E-03	5	
49	"	2110	1	1903	207	3.8E-03	4	
49.5	"	2030	1	1903	127	2.3E-03	Activity is below LD	
50	"	2470	1	1903	567	1.0E-02	10	
50.5	"	2396	1	1903	493	9.1E-03	9	
51	"	2240	1	1903	337	6.2E-03	6	
51.5	"	2256	1	1903	353	6.5E-03	6	
52	"	2520	1	1903	617	1.1E-02	11	
52.5	"	2705	1	1903	802	1.5E-02	15	
53	"	2633	1	1903	730	1.3E-02	13	
53.5	"	2424	1	1903	521	9.6E-03	10	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	0700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

L_D : 3.77 nCi 0.0038 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2483	1	1903	580	1.1E-02	11	
54.5	"	2610	1	1903	707	1.3E-02	13	
55	"	2768	1	1903	865	1.6E-02	16	
55.5	"	2824	1	1903	921	1.7E-02	17	
56	"	2658	1	1903	755	1.4E-02	14	
56.5	"	2560	1	1903	657	1.2E-02	12	
57	"	2639	1	1903	736	1.4E-02	14	
57.5	"	2711	1	1903	808	1.5E-02	15	
58	"	2729	1	1903	826	1.5E-02	15	
58.5	"	2720	1	1903	817	1.5E-02	15	
59	"	2689	1	1903	786	1.4E-02	14	
59.5	"	2812	1	1903	909	1.7E-02	17	
60	"	2749	1	1903	846	1.6E-02	16	
60.5	"	2530	1	1903	627	1.2E-02	12	
61	"	2480	1	1903	577	1.1E-02	11	
61.5	"	2340	1	1903	437	8.0E-03	8	
62	"	2617	1	1903	714	1.3E-02	13	
62.5	"	2645	1	1903	742	1.4E-02	14	
63	"	2810	1	1903	907	1.7E-02	17	
63.5	"	2719	1	1903	816	1.5E-02	15	
64	"	2620	1	1903	717	1.3E-02	13	
64.5	"	2705	1	1903	802	1.5E-02	15	
65	"	2540	1	1903	637	1.2E-02	12	
65.5	"	2535	1	1903	632	1.2E-02	12	
66	"	2580	1	1903	677	1.2E-02	12	
66.5	"	2728	1	1903	825	1.5E-02	15	
67	"	2810	1	1903	907	1.7E-02	17	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_p : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	2676	1	1903	773	1.4E-02	14	
68	"	2880	1	1903	977	1.8E-02	18	
68.5	"	2774	1	1903	871	1.6E-02	16	
69	"	2735	1	1903	832	1.5E-02	15	
69.5	"	2720	1	1903	817	1.5E-02	15	
70	"	2695	1	1903	792	1.5E-02	15	
70.5	"	2810	1	1903	907	1.7E-02	17	
71	"	2835	1	1903	932	1.7E-02	17	
71.5	"	2795	1	1903	892	1.6E-02	16	
72	"	2766	1	1903	863	1.6E-02	16	
72.5	"	2617	1	1903	714	1.3E-02	13	
73	"	2520	1	1903	617	1.1E-02	11	
73.5	"	2609	1	1903	706	1.3E-02	13	
74	"	3007	1	1903	1104	2.0E-02	20	
74.5	"	3306	1	1903	1403	2.6E-02	26	
75	"	3242	1	1903	1339	2.5E-02	25	
75.5	"	3416	1	1903	1513	2.8E-02	28	
76	"	3740	1	1903	1837	3.4E-02	34	
76.5	"	3774	1	1903	1871	3.4E-02	34	
77	"	2760	1	1903	857	1.6E-02	16	
77.5	"	2620	1	1903	717	1.3E-02	13	
78	"	4315	1	1903	2412	4.4E-02	44	
78.5	"	3810	1	1903	1907	3.5E-02	35	
79	"	3218	1	1903	1315	2.4E-02	24	
79.5	"	3289	1	1903	1386	2.5E-02	25	
80	"	3313	1	1903	1410	2.6E-02	26	
80.5	"	3146	1	1903	1243	2.3E-02	23	

New World Technology Radiological Survey Report

Page 7 of 7

Date:	12/20/97	Time:	O700	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F1 to Man Hole 4F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

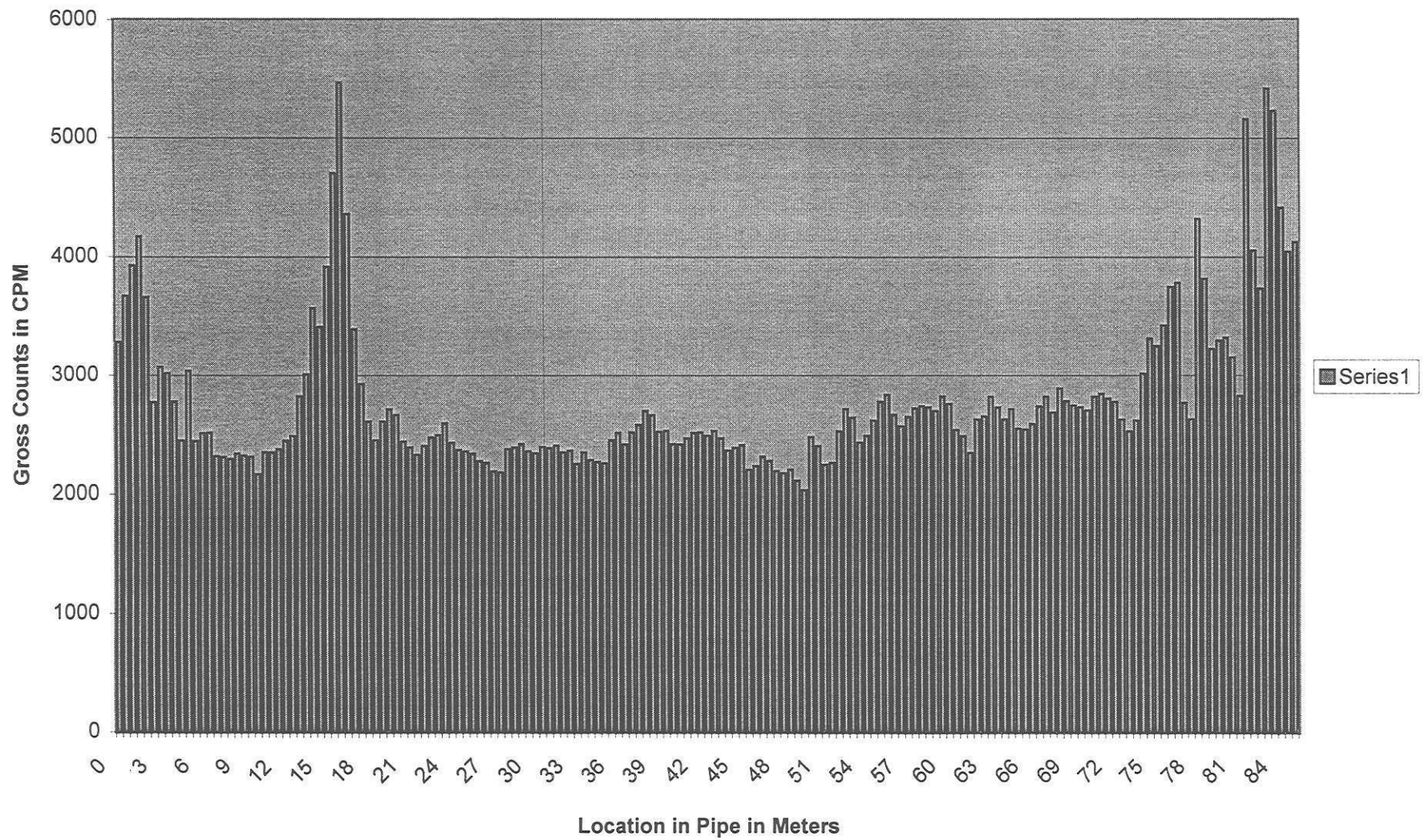
Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
81	"	2818	1	1903	915	1.7E-02	17	
81.5	"	5152	1	1903	3249	6.0E-02	60	
82	"	4048	1	1903	2145	3.9E-02	39	
82.5	"	3727	1	1903	1824	3.3E-02	33	
83	Bottom of M/H	5409	1	2528	2881	5.3E-02	53	
83.5	Inside M/H	5222	1	2528	2694	4.9E-02	49	
84	"	4410	1	2528	1882	3.5E-02	35	
84.5	"	4040	1	2528	1512	2.8E-02	28	
85	Plane of M/H	4120	1	2528	1592	2.9E-02	29	

Figure 4F1-4F2 Survey Results from Mahnole 4F1 to Manhole 4F2



New World Technology Radiological Survey Report

Page 1 of 8

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

L_D : 3.77 nCi 0.0038 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	3108	1	2528	580	1.1E-02	11	
0.5	I/S Manhole	3320	1	2528	792	1.5E-02	15	
1	"	3444	1	2528	916	1.7E-02	17	
1.5	"	4710	1	2528	2182	4.0E-02	40	
2	"	4448	1	2528	1920	3.5E-02	35	
2.5	I/S Pipe	2630	1	1903	727	1.3E-02	13	
3	"	2380	1	1903	477	8.8E-03	9	
3.5	"	2120	1	1903	217	4.0E-03	4	
4	"	2056	1	1903	153	2.8E-03	Activity is below LD	
4.5	"	2233	1	1903	330	6.1E-03	6	
5	"	2158	1	1903	255	4.7E-03	5	
5.5	"	2350	1	1903	447	8.2E-03	8	
6	"	2341	1	1903	438	8.0E-03	8	
6.5	"	2605	1	1903	702	1.3E-02	13	
7	"	2562	1	1903	659	1.2E-02	12	
7.5	"	2540	1	1903	637	1.2E-02	12	
8	"	2466	1	1903	563	1.0E-02	10	
8.5	"	2722	1	1903	819	1.5E-02	15	
9	"	2635	1	1903	732	1.3E-02	13	
9.5	"	2411	1	1903	508	9.3E-03	9	
10	"	2249	1	1903	346	6.4E-03	6	
10.5	"	2115	1	1903	212	3.9E-03	4	
11	"	1998	1	1903	95	1.7E-03	Activity is below LD	
11.5	"	2118	1	1903	215	3.9E-03	4	
12	"	2208	1	1903	305	5.6E-03	6	
12.5	"	2706	1	1903	803	1.5E-02	15	
13	"	2902	1	1903	999	1.8E-02	18	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	3090	1	1903	1187	2.2E-02	22	
14	"	2887	1	1903	984	1.8E-02	18	
14.5	"	2600	1	1903	697	1.3E-02	13	
15	"	2370	1	1903	467	8.6E-03	9	
15.5	"	2524	1	1903	621	1.1E-02	11	
16	"	2560	1	1903	657	1.2E-02	12	
16.5	"	2780	1	1903	877	1.6E-02	16	
17	"	2596	1	1903	693	1.3E-02	13	
17.5	"	2582	1	1903	679	1.2E-02	12	
18	"	2537	1	1903	634	1.2E-02	12	
18.5	"	2712	1	1903	809	1.5E-02	15	
19	"	2659	1	1903	756	1.4E-02	14	
19.5	"	2560	1	1903	657	1.2E-02	12	
20	"	2503	1	1903	600	1.1E-02	11	
20.5	"	2460	1	1903	557	1.0E-02	10	
21	"	2490	1	1903	587	1.1E-02	11	
21.5	"	2694	1	1903	791	1.5E-02	15	
22	"	2553	1	1903	650	1.2E-02	12	
22.5	"	2740	1	1903	837	1.5E-02	15	
23	"	2763	1	1903	860	1.6E-02	16	
23.5	"	2605	1	1903	702	1.3E-02	13	
24	"	2663	1	1903	760	1.4E-02	14	
24.5	"	3400	1	1903	1497	2.7E-02	27	
25	"	3180	1	1903	1277	2.3E-02	23	
25.5	"	2315	1	1903	412	7.6E-03	8	
26	"	2285	1	1903	382	7.0E-03	7	
26.5	"	2260	1	1903	357	6.6E-03	7	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2407	1	1903	504	9.3E-03	9	
27.5	"	2357	1	1903	454	8.3E-03	8	
28	"	2310	1	1903	407	7.5E-03	7	
28.5	"	2257	1	1903	354	6.5E-03	7	
29	"	2560	1	1903	657	1.2E-02	12	
29.5	"	2477	1	1903	574	1.1E-02	11	
30	"	2580	1	1903	677	1.2E-02	12	
30.5	"	2512	1	1903	609	1.1E-02	11	
31	"	2760	1	1903	857	1.6E-02	16	
31.5	"	2661	1	1903	758	1.4E-02	14	
32	"	3105	1	1903	1202	2.2E-02	22	
32.5	"	3111	1	1903	1208	2.2E-02	22	
33	"	2712	1	1903	809	1.5E-02	15	
33.5	"	2655	1	1903	752	1.4E-02	14	
34	"	2410	1	1903	507	9.3E-03	9	
34.5	"	2466	1	1903	563	1.0E-02	10	
35	"	2806	1	1903	903	1.7E-02	17	
35.5	"	2857	1	1903	954	1.8E-02	18	
36	"	1940	1	1903	37	6.8E-04	Activity is below LD	
36.5	"	1925	1	1903	22	4.0E-04	Activity is below LD	
37	"	2040	1	1903	137	2.5E-03	Activity is below LD	
37.5	"	2158	1	1903	255	4.7E-03	5	
38	"	2676	1	1903	773	1.4E-02	14	
38.5	"	3112	1	1903	1209	2.2E-02	22	
39	"	2109	1	1903	206	3.8E-03	4	
39.5	"	1910	1	1903	7	1.3E-04	Activity is below LD	
40	"	1803	1	1903	-100	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 4 of 8

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

L_D : 3.77 nCi

0.0038 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	1717	1	1903	-186	0.0E+00	Activity is below LD	
41	"	1840	1	1903	-63	0.0E+00	Activity is below LD	
41.5	"	1827	1	1903	-76	0.0E+00	Activity is below LD	
42	"	1680	1	1903	-223	0.0E+00	Activity is below LD	
42.5	"	1720	1	1903	-183	0.0E+00	Activity is below LD	
43	"	1910	1	1903	7	1.3E-04	Activity is below LD	
43.5	"	1971	1	1903	68	1.2E-03	Activity is below LD	
44	"	1868	1	1903	-35	0.0E+00	Activity is below LD	
44.5	"	1838	1	1903	-65	0.0E+00	Activity is below LD	
45	"	1764	1	1903	-139	0.0E+00	Activity is below LD	
45.5	"	1833	1	1903	-70	0.0E+00	Activity is below LD	
46	"	2120	1	1903	217	4.0E-03	4	
46.5	"	2061	1	1903	158	2.9E-03	Activity is below LD	
47	"	2088	1	1903	185	3.4E-03	Activity is below LD	
47.5	"	2140	1	1903	237	4.4E-03	4	
48	"	2036	1	1903	133	2.4E-03	Activity is below LD	
48.5	"	1874	1	1903	-29	0.0E+00	Activity is below LD	
49	"	1803	1	1903	-100	0.0E+00	Activity is below LD	
49.5	"	1640	1	1903	-263	0.0E+00	Activity is below LD	
50	"	1573	1	1903	-330	0.0E+00	Activity is below LD	
50.5	"	1610	1	1903	-293	0.0E+00	Activity is below LD	
51	"	1653	1	1903	-250	0.0E+00	Activity is below LD	
51.5	"	1804	1	1903	-99	0.0E+00	Activity is below LD	
52	"	1956	1	1903	53	9.7E-04	Activity is below LD	
52.5	"	2182	1	1903	279	5.1E-03	5	
53	"	2105	1	1903	202	3.7E-03	Activity is below LD	
53.5	"	2210	1	1903	307	5.6E-03	6	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2235	1	1903	332	6.1E-03	6	
54.5	"	2225	1	1903	322	5.9E-03	6	
55	"	2217	1	1903	314	5.8E-03	6	
55.5	"	2140	1	1903	237	4.4E-03	4	
56	"	2227	1	1903	324	5.9E-03	6	
56.5	"	2115	1	1903	212	3.9E-03	4	
57	"	2185	1	1903	282	5.2E-03	5	
57.5	"	2187	1	1903	284	5.2E-03	5	
58	"	2180	1	1903	277	5.1E-03	5	
58.5	"	2199	1	1903	296	5.4E-03	5	
59	"	2150	1	1903	247	4.5E-03	5	
59.5	"	2040	1	1903	137	2.5E-03	Activity is below LD	
60	"	1920	1	1903	17	3.1E-04	Activity is below LD	
60.5	"	2035	1	1903	132	2.4E-03	Activity is below LD	
61	"	1810	1	1903	-93	0.0E+00	Activity is below LD	
61.5	"	1940	1	1903	37	6.8E-04	Activity is below LD	
62	"	1690	1	1903	-213	0.0E+00	Activity is below LD	
62.5	"	1805	1	1903	-98	0.0E+00	Activity is below LD	
63	"	1872	1	1903	-31	0.0E+00	Activity is below LD	
63.5	"	2002	1	1903	99	1.8E-03	Activity is below LD	
64	"	1935	1	1903	32	5.9E-04	Activity is below LD	
64.5	"	1959	1	1903	56	1.0E-03	Activity is below LD	
65	"	1789	1	1903	-114	0.0E+00	Activity is below LD	
65.5	"	1732	1	1903	-171	0.0E+00	Activity is below LD	
66	"	1780	1	1903	-123	0.0E+00	Activity is below LD	
66.5	"	1626	1	1903	-277	0.0E+00	Activity is below LD	
7	"	1734	1	1903	-169	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	1680	1	1903	-223	0.0E+00	Activity is below LD	
68	"	1700	1	1903	-203	0.0E+00	Activity is below LD	
68.5	"	1880	1	1903	-23	0.0E+00	Activity is below LD	
69	"	1843	1	1903	-60	0.0E+00	Activity is below LD	
69.5	"	1822	1	1903	-81	0.0E+00	Activity is below LD	
70	"	1830	1	1903	-73	0.0E+00	Activity is below LD	
70.5	"	1875	1	1903	-28	0.0E+00	Activity is below LD	
71	"	1690	1	1903	-213	0.0E+00	Activity is below LD	
71.5	"	1669	1	1903	-234	0.0E+00	Activity is below LD	
72	"	1928	1	1903	25	4.6E-04	Activity is below LD	
72.5	"	1948	1	1903	45	8.3E-04	Activity is below LD	
73	"	1934	1	1903	31	5.7E-04	Activity is below LD	
73.5	"	1896	1	1903	-7	0.0E+00	Activity is below LD	
74	"	1848	1	1903	-55	0.0E+00	Activity is below LD	
74.5	"	1879	1	1903	-24	0.0E+00	Activity is below LD	
75	"	1836	1	1903	-67	0.0E+00	Activity is below LD	
75.5	"	1760	1	1903	-143	0.0E+00	Activity is below LD	
76	"	1590	1	1903	-313	0.0E+00	Activity is below LD	
76.5	"	1683	1	1903	-220	0.0E+00	Activity is below LD	
77	"	2010	1	1903	107	2.0E-03	Activity is below LD	
77.5	"	1940	1	1903	37	6.8E-04	Activity is below LD	
78	"	1850	1	1903	-53	0.0E+00	Activity is below LD	
78.5	"	1804	1	1903	-99	0.0E+00	Activity is below LD	
79	"	1748	1	1903	-155	0.0E+00	Activity is below LD	
79.5	"	1712	1	1903	-191	0.0E+00	Activity is below LD	
80	"	2015	1	1903	112	2.1E-03	Activity is below LD	
80.5	"	1735	1	1903	-168	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 206 cpm

Bkrd CPM	Source (nCi)	Source CPM	
975	23.1	2233	
I/S Pipe Background		1903	CPM
I/S M/H Background		2528	CPM

L_D : 3.77 nCi 0.0038 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
81	"	1717	1	1903	-186	0.0E+00	Activity is below LD	
81.5	"	1910	1	1903	7	1.3E-04	Activity is below LD	
82	"	1951	1	1903	48	8.8E-04	Activity is below LD	
82.5	"	1793	1	1903	-110	0.0E+00	Activity is below LD	
83	"	1860	1	1903	-43	0.0E+00	Activity is below LD	
83.5	"	1704	1	1903	-199	0.0E+00	Activity is below LD	
84	"	1724	1	1903	-179	0.0E+00	Activity is below LD	
84.5	"	1701	1	1903	-202	0.0E+00	Activity is below LD	
85	"	1720	1	1903	-183	0.0E+00	Activity is below LD	
85.5	"	1750	1	1903	-153	0.0E+00	Activity is below LD	
86	"	1840	1	1903	-63	0.0E+00	Activity is below LD	
86.5	"	1883	1	1903	-20	0.0E+00	Activity is below LD	
87	"	2114	1	1903	211	3.9E-03	4	
87.5	"	1776	1	1903	-127	0.0E+00	Activity is below LD	
88	"	1510	1	1903	-393	0.0E+00	Activity is below LD	
88.5	"	1483	1	1903	-420	0.0E+00	Activity is below LD	
89	"	1610	1	1903	-293	0.0E+00	Activity is below LD	
89.5	"	1689	1	1903	-214	0.0E+00	Activity is below LD	
90	"	1880	1	1903	-23	0.0E+00	Activity is below LD	
90.5	"	1755	1	1903	-148	0.0E+00	Activity is below LD	
91	"	1690	1	1903	-213	0.0E+00	Activity is below LD	
91.5	"	1694	1	1903	-209	0.0E+00	Activity is below LD	
92	"	1665	1	1903	-238	0.0E+00	Activity is below LD	
92.5	"	1889	1	1903	-14	0.0E+00	Activity is below LD	
93	"	1810	1	1903	-93	0.0E+00	Activity is below LD	
93.5	"	1682	1	1903	-221	0.0E+00	Activity is below LD	
94	Bottom of M/H	1675	1	2528	-853	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 8 of 8

Date:	12/20/97	Time:	1105	Surveyor (print):	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 4F2 to Man Hole 4F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

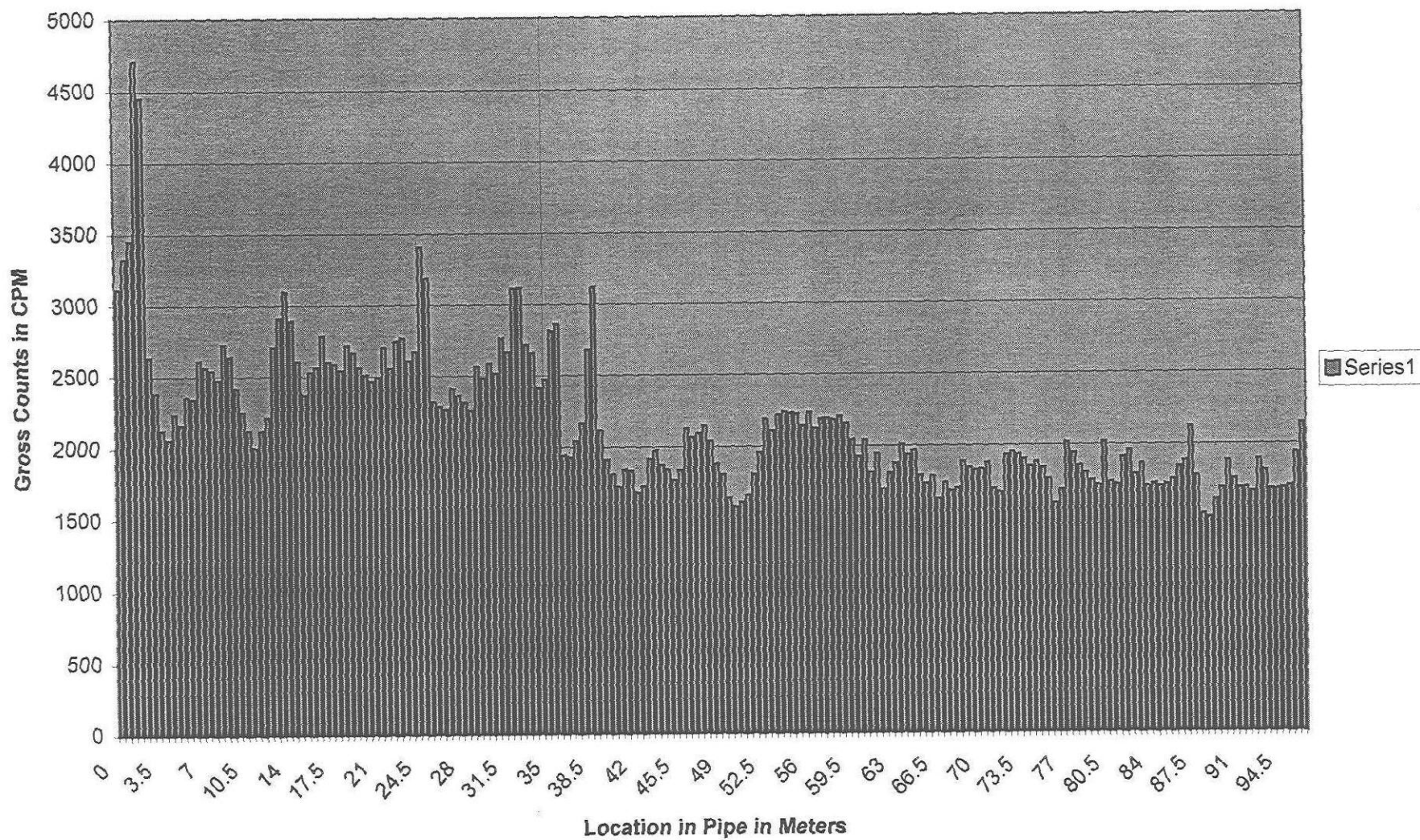
Net counts for L_D : 206 cpm L_D : 3.77 nCi 0.0038 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
975	23.1	2233
I/S Pipe Background		1903 CPM
I/S M/H Background		2528 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
94.5	Inside M/H	1688	1	2528	-840	0.0E+00	Activity is below LD	
95	"	1704	1	2528	-824	0.0E+00	Activity is below LD	
95.5	"	1933	1	2528	-595	0.0E+00	Activity is below LD	
96	Plane of M/H	2140	1	2528	-388	0.0E+00	Activity is below LD	

Figure 4F2-4F3 Survey Results from Mahnole 4F2 to Manhole 4F3



New World Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	22956	1	3237	19719	3.5E-01	349	
0.5	I/S Manhole	30109	1	3237	26872	4.8E-01	475	
1	"	31971	1	3237	28734	5.1E-01	508	
5	"	33672	1	3237	30435	5.4E-01	538	
2	"	29253	1	3237	26016	4.6E-01	460	
2.5	I/S Pipe	20526	1	1857	18669	3.3E-01	330	
3	"	14857	1	1857	13000	2.3E-01	230	
3.5	"	10567	1	1857	8710	1.5E-01	154	
4	"	7810	1	1857	5953	1.1E-01	105	
4.5	"	23608	1	1857	21751	3.8E-01	385	
5	"	19146	1	1857	17289	3.1E-01	306	
5.5	"	10157	1	1857	8300	1.5E-01	147	
6	"	14118	1	1857	12261	2.2E-01	217	
6.5	"	9928	1	1857	8071	1.4E-01	143	
7	"	10277	1	1857	8420	1.5E-01	149	
7.5	"	8593	1	1857	6736	1.2E-01	119	
8	"	9424	1	1857	7567	1.3E-01	134	
8.5	"	9371	1	1857	7514	1.3E-01	133	
9	"	8109	1	1857	6252	1.1E-01	111	
9.5	"	3361	1	1857	1504	2.7E-02	27	
10	"	4303	1	1857	2446	4.3E-02	43	
10.5	"	3895	1	1857	2038	3.6E-02	36	
11	"	3766	1	1857	1909	3.4E-02	34	
11.5	"	3109	1	1857	1252	2.2E-02	22	
12	"	3217	1	1857	1360	2.4E-02	24	
12.5	"	3083	1	1857	1226	2.2E-02	22	
3	"	2891	1	1857	1034	1.8E-02	18	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	O735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_p : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	3166	1	1857	1309	2.3E-02	23	
14	"	3039	1	1857	1182	2.1E-02	21	
14.5	"	3185	1	1857	1328	2.3E-02	23	
15	"	3245	1	1857	1388	2.5E-02	25	
15.5	"	3380	1	1857	1523	2.7E-02	27	
16	"	2735	1	1857	878	1.6E-02	16	
16.5	"	2609	1	1857	752	1.3E-02	13	
17	"	2407	1	1857	550	9.7E-03	10	
17.5	"	2429	1	1857	572	1.0E-02	10	
18	"	2451	1	1857	594	1.1E-02	11	
18.5	"	2612	1	1857	755	1.3E-02	13	
19	"	2703	1	1857	846	1.5E-02	15	
19.5	"	2758	1	1857	901	1.6E-02	16	
20	"	2602	1	1857	745	1.3E-02	13	
20.5	"	2510	1	1857	653	1.2E-02	12	
21	"	2506	1	1857	649	1.1E-02	11	
21.5	"	2522	1	1857	665	1.2E-02	12	
22	"	2563	1	1857	706	1.2E-02	12	
22.5	"	2485	1	1857	628	1.1E-02	11	
23	"	2495	1	1857	638	1.1E-02	11	
23.5	"	2517	1	1857	660	1.2E-02	12	
24	"	2521	1	1857	664	1.2E-02	12	
24.5	"	2619	1	1857	762	1.3E-02	13	
25	"	2538	1	1857	681	1.2E-02	12	
25.5	"	2545	1	1857	688	1.2E-02	12	
26	"	2691	1	1857	834	1.5E-02	15	
26.5	"	2622	1	1857	765	1.4E-02	14	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2757	1	1857	900	1.6E-02	16	
27.5	"	2526	1	1857	669	1.2E-02	12	
28	"	2672	1	1857	815	1.4E-02	14	
28.5	"	14603	1	1857	12746	2.3E-01	225	
29	"	2532	1	1857	675	1.2E-02	12	
29.5	"	2603	1	1857	746	1.3E-02	13	
30	"	2560	1	1857	703	1.2E-02	12	
30.5	"	2589	1	1857	732	1.3E-02	13	
31	"	2638	1	1857	781	1.4E-02	14	
31.5	"	2619	1	1857	762	1.3E-02	13	
32	"	2652	1	1857	795	1.4E-02	14	
32.5	"	2642	1	1857	785	1.4E-02	14	
33	"	2658	1	1857	801	1.4E-02	14	
33.5	"	2804	1	1857	947	1.7E-02	17	
34	"	2737	1	1857	880	1.6E-02	16	
34.5	"	2867	1	1857	1010	1.8E-02	18	
35	"	2626	1	1857	769	1.4E-02	14	
35.5	"	2717	1	1857	860	1.5E-02	15	
36	"	2704	1	1857	847	1.5E-02	15	
36.5	"	2666	1	1857	809	1.4E-02	14	
37	"	2788	1	1857	931	1.6E-02	16	
37.5	"	2786	1	1857	929	1.6E-02	16	
38	"	2554	1	1857	697	1.2E-02	12	
38.5	"	2754	1	1857	897	1.6E-02	16	
39	"	2695	1	1857	838	1.5E-02	15	
39.5	"	2710	1	1857	853	1.5E-02	15	
40	"	2745	1	1857	888	1.6E-02	16	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857
I/S M/H Background		3237
		CPM
		CPM

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	2846	1	1857	989	1.7E-02	17	
41	"	2743	1	1857	886	1.6E-02	16	
41.5	"	2772	1	1857	915	1.6E-02	16	
42	"	2654	1	1857	797	1.4E-02	14	
42.5	"	2834	1	1857	977	1.7E-02	17	
43	"	2875	1	1857	1018	1.8E-02	18	
43.5	"	2697	1	1857	840	1.5E-02	15	
44	"	2745	1	1857	888	1.6E-02	16	
44.5	"	2713	1	1857	856	1.5E-02	15	
45	"	2711	1	1857	854	1.5E-02	15	
45.5	"	2665	1	1857	808	1.4E-02	14	
46	"	2681	1	1857	824	1.5E-02	15	
46.5	"	2633	1	1857	776	1.4E-02	14	
47	"	2655	1	1857	798	1.4E-02	14	
47.5	"	2544	1	1857	687	1.2E-02	12	
48	"	2513	1	1857	656	1.2E-02	12	
48.5	"	2576	1	1857	719	1.3E-02	13	
49	"	2613	1	1857	756	1.3E-02	13	
49.5	"	2620	1	1857	763	1.3E-02	13	
50	"	2742	1	1857	885	1.6E-02	16	
50.5	"	2554	1	1857	697	1.2E-02	12	
51	"	2708	1	1857	851	1.5E-02	15	
51.5	"	2611	1	1857	754	1.3E-02	13	
52	"	2572	1	1857	715	1.3E-02	13	
52.5	"	2566	1	1857	709	1.3E-02	13	
53	"	2531	1	1857	674	1.2E-02	12	
53.5	"	2567	1	1857	710	1.3E-02	13	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	O735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2659	1	1857	802	1.4E-02	14	
54.5	"	2600	1	1857	743	1.3E-02	13	
55	"	2646	1	1857	789	1.4E-02	14	
55.5	"	2606	1	1857	749	1.3E-02	13	
56	"	2740	1	1857	883	1.6E-02	16	
56.5	"	2545	1	1857	688	1.2E-02	12	
57	"	2567	1	1857	710	1.3E-02	13	
57.5	"	2821	1	1857	964	1.7E-02	17	
58	"	2630	1	1857	773	1.4E-02	14	
58.5	"	2558	1	1857	701	1.2E-02	12	
59	"	2653	1	1857	796	1.4E-02	14	
59.5	"	2674	1	1857	817	1.4E-02	14	
60	"	2884	1	1857	1027	1.8E-02	18	
60.5	"	2926	1	1857	1069	1.9E-02	19	
61	"	2720	1	1857	863	1.5E-02	15	
61.5	"	2952	1	1857	1095	1.9E-02	19	
62	"	2908	1	1857	1051	1.9E-02	19	
62.5	"	2848	1	1857	991	1.8E-02	18	
63	"	2791	1	1857	934	1.7E-02	17	
63.5	"	2534	1	1857	677	1.2E-02	12	
64	"	2439	1	1857	582	1.0E-02	10	
64.5	"	2388	1	1857	531	9.4E-03	9	
65	"	2405	1	1857	548	9.7E-03	10	
65.5	"	2233	1	1857	376	6.7E-03	7	
66	"	2313	1	1857	456	8.1E-03	8	
66.5	"	2246	1	1857	389	6.9E-03	7	
67	"	2225	1	1857	368	6.5E-03	7	

New World Technology Radiological Survey Report

Page 6 of 10

Date:	12/19/97	Time:	O735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1480	23.1	2786	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	2198	1	1857	341	6.0E-03	6	
68	"	2165	1	1857	308	5.4E-03	5	
68.5	"	2232	1	1857	375	6.6E-03	7	
69	"	2342	1	1857	485	8.6E-03	9	
69.5	"	2071	1	1857	214	3.8E-03	4	
70	"	2080	1	1857	223	3.9E-03	4	
70.5	"	2146	1	1857	289	5.1E-03	5	
71	"	2322	1	1857	465	8.2E-03	8	
71.5	"	2126	1	1857	269	4.8E-03	5	
72	"	2261	1	1857	404	7.1E-03	7	
72.5	"	2164	1	1857	307	5.4E-03	5	
73	"	2201	1	1857	344	6.1E-03	6	
73.5	"	2165	1	1857	308	5.4E-03	5	
74	"	2197	1	1857	340	6.0E-03	6	
74.5	"	2155	1	1857	298	5.3E-03	5	
75	"	2183	1	1857	326	5.8E-03	6	
75.5	"	2188	1	1857	331	5.9E-03	6	
76	"	2201	1	1857	344	6.1E-03	6	
76.5	"	2109	1	1857	252	4.5E-03	4	
77	"	2276	1	1857	419	7.4E-03	7	
77.5	"	2053	1	1857	196	3.5E-03	Activity is below LD	
78	"	2056	1	1857	199	3.5E-03	Activity is below LD	
78.5	"	2082	1	1857	225	4.0E-03	4	
79	"	1995	1	1857	138	2.4E-03	Activity is below LD	
79.5	"	2092	1	1857	235	4.2E-03	4	
80	"	2212	1	1857	355	6.3E-03	6	
80.5	"	2121	1	1857	264	4.7E-03	5	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
81	"	2189	1	1857	332	5.9E-03	6	
81.5	"	2205	1	1857	348	6.2E-03	6	
82	"	2026	1	1857	169	3.0E-03	Activity is below LD	
82.5	"	2166	1	1857	309	5.5E-03	5	
83	"	2195	1	1857	338	6.0E-03	6	
83.5	"	2029	1	1857	172	3.0E-03	Activity is below LD	
84	"	2070	1	1857	213	3.8E-03	4	
84.5	"	2031	1	1857	174	3.1E-03	Activity is below LD	
85	"	2124	1	1857	267	4.7E-03	5	
85.5	"	2208	1	1857	351	6.2E-03	6	
86	"	2192	1	1857	335	5.9E-03	6	
86.5	"	2218	1	1857	361	6.4E-03	6	
87	"	2368	1	1857	511	9.0E-03	9	
87.5	"	2470	1	1857	613	1.1E-02	11	
88	"	2568	1	1857	711	1.3E-02	13	
88.5	"	2615	1	1857	758	1.3E-02	13	
89	"	2543	1	1857	686	1.2E-02	12	
89.5	"	2435	1	1857	578	1.0E-02	10	
90	"	2564	1	1857	707	1.3E-02	13	
90.5	"	2653	1	1857	796	1.4E-02	14	
91	"	2583	1	1857	726	1.3E-02	13	
91.5	"	2601	1	1857	744	1.3E-02	13	
92	"	2676	1	1857	819	1.4E-02	14	
92.5	"	2811	1	1857	954	1.7E-02	17	
93	"	2704	1	1857	847	1.5E-02	15	
93.5	"	2781	1	1857	924	1.6E-02	16	
4	"	2560	1	1857	703	1.2E-02	12	

New World Technology Radiological Survey Report

Page 8 of 10

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 3.59 nCi 0.0036 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
94.5	"	2538	1	1857	681	1.2E-02	12	
95	"	2531	1	1857	674	1.2E-02	12	
95.5	"	2610	1	1857	753	1.3E-02	13	
96	"	2743	1	1857	886	1.6E-02	16	
96.5	"	2678	1	1857	821	1.5E-02	15	
97	"	2521	1	1857	664	1.2E-02	12	
97.5	"	2626	1	1857	769	1.4E-02	14	
98	"	2700	1	1857	843	1.5E-02	15	
98.5	"	2613	1	1857	756	1.3E-02	13	
99	"	2656	1	1857	799	1.4E-02	14	
99.5	"	2706	1	1857	849	1.5E-02	15	
100	"	2654	1	1857	797	1.4E-02	14	
110.5	"	2577	1	1857	720	1.3E-02	13	
111	"	2571	1	1857	714	1.3E-02	13	
111.5	"	2685	1	1857	828	1.5E-02	15	
112	"	2568	1	1857	711	1.3E-02	13	
112.5	"	2624	1	1857	767	1.4E-02	14	
113	"	2685	1	1857	828	1.5E-02	15	
113.5	"	2615	1	1857	758	1.3E-02	13	
114	"	2613	1	1857	756	1.3E-02	13	
114.5	"	2642	1	1857	785	1.4E-02	14	
115	"	2534	1	1857	677	1.2E-02	12	
115.5	"	2708	1	1857	851	1.5E-02	15	
116	"	2564	1	1857	707	1.3E-02	13	
116.5	"	2512	1	1857	655	1.2E-02	12	
117	"	2518	1	1857	661	1.2E-02	12	
117.5	"	2709	1	1857	852	1.5E-02	15	

NewWorld Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
118	"	2649	1	1857	792	1.4E-02	14	
118.5	"	2557	1	1857	700	1.2E-02	12	
119	"	2457	1	1857	600	1.1E-02	11	
119.5	"	2597	1	1857	740	1.3E-02	13	
120	"	2690	1	1857	833	1.5E-02	15	
120.5	"	2643	1	1857	786	1.4E-02	14	
121	"	2586	1	1857	729	1.3E-02	13	
121.5	"	2599	1	1857	742	1.3E-02	13	
122	"	2529	1	1857	672	1.2E-02	12	
122.5	"	2507	1	1857	650	1.1E-02	11	
123	"	2518	1	1857	661	1.2E-02	12	
123.5	"	2470	1	1857	613	1.1E-02	11	
124	"	2497	1	1857	640	1.1E-02	11	
124.5	"	2506	1	1857	649	1.1E-02	11	
125	"	2509	1	1857	652	1.2E-02	12	
125.5	"	2536	1	1857	679	1.2E-02	12	
126	"	2571	1	1857	714	1.3E-02	13	
126.5	"	2599	1	1857	742	1.3E-02	13	
127	"	2597	1	1857	740	1.3E-02	13	
127.5	"	2467	1	1857	610	1.1E-02	11	
128	"	2488	1	1857	631	1.1E-02	11	
128.5	"	2551	1	1857	694	1.2E-02	12	
129	"	2563	1	1857	706	1.2E-02	12	
129.5	"	2398	1	1857	541	9.6E-03	10	
130	"	2507	1	1857	650	1.1E-02	11	
130.5	"	2642	1	1857	785	1.4E-02	14	
131	"	2851	1	1857	994	1.8E-02	18	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	0735	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F to Man Hole 5F1				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

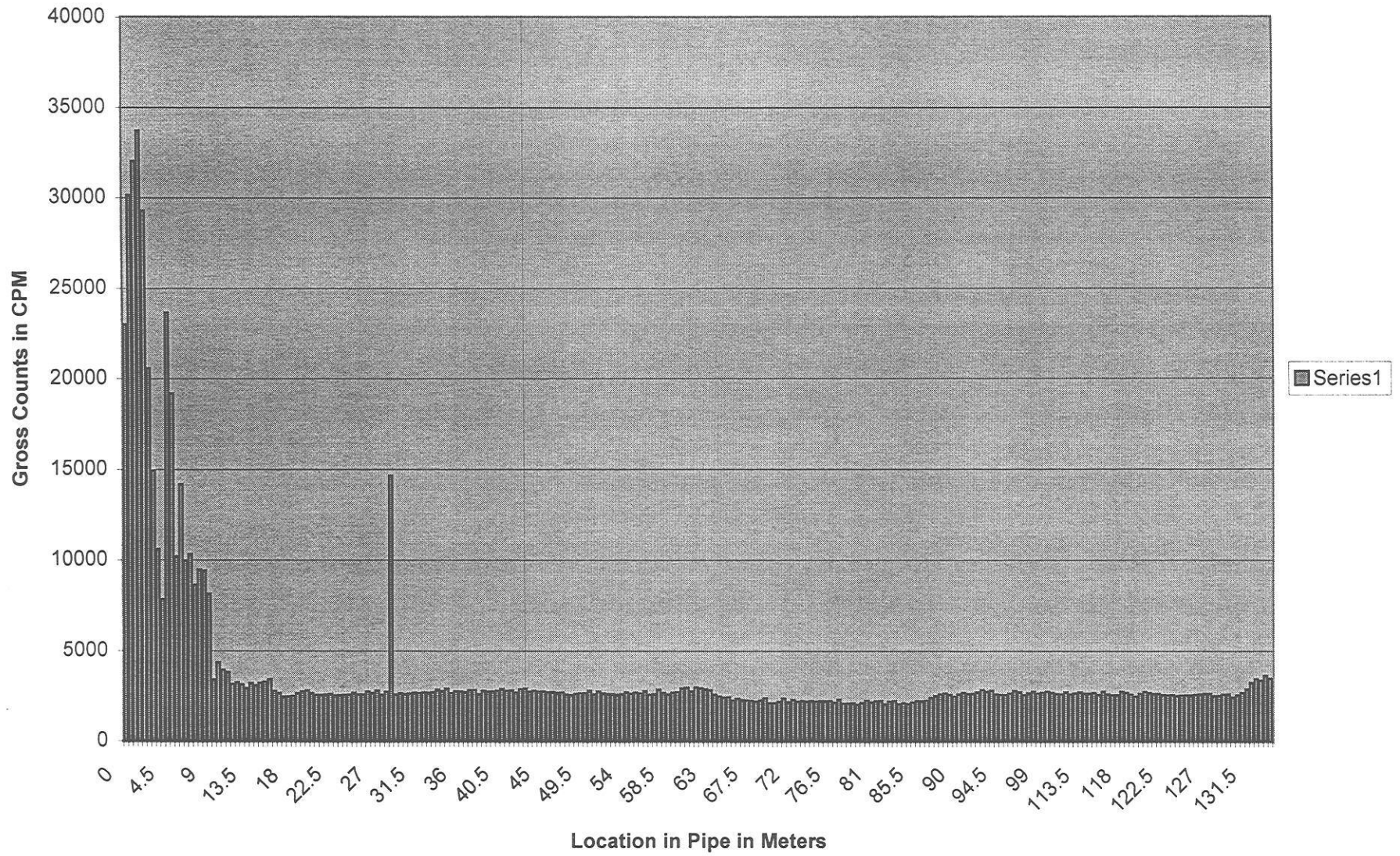
Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
131.5	"	3204	1	1857	1347	2.4E-02	24	
132	"	3408	1	1857	1551	2.7E-02	27	
132.5	Bottom of M/H	3326	1	3237	89	1.6E-03	Activity is below LD	
133	"	3591	1	3237	354	6.3E-03	6	
133.5	"	3437	1	3237	200	3.5E-03	Activity is below LD	
134	"	3502	1	3237	265	4.7E-03	0.005	
134.5	Plane of M/H	3212	1	3237	-25	0.0E+00	Activity is below LD	

Figure 5F-5F1 Survey Results from Mahnole 5F to Manhole 5F1



New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	3462	1	3237	225	4.0E-03	4	
0.5	I/S Manhole	3134	1	3237	-103	0.0E+00	Activity is below LD	
1	"	2720	1	3237	-517	0.0E+00	Activity is below LD	
5	"	2817	1	3237	-420	0.0E+00	Activity is below LD	
2	"	2951	1	3237	-286	0.0E+00	Activity is below LD	
2.5	I/S Pipe	2655	1	1857	798	1.4E-02	14	
3	"	2602	1	1857	745	1.3E-02	13	
3.5	"	2478	1	1857	621	1.1E-02	11	
4	"	2488	1	1857	631	1.1E-02	11	
4.5	"	2546	1	1857	689	1.2E-02	12	
5	"	2493	1	1857	636	1.1E-02	11	
5.5	"	2445	1	1857	588	1.0E-02	10	
6	"	2502	1	1857	645	1.1E-02	11	
6.5	"	2361	1	1857	504	8.9E-03	9	
7	"	2536	1	1857	679	1.2E-02	12	
7.5	"	2465	1	1857	608	1.1E-02	11	
8	"	2500	1	1857	643	1.1E-02	11	
8.5	"	2438	1	1857	581	1.0E-02	10	
9	"	2511	1	1857	654	1.2E-02	12	
9.5	"	2446	1	1857	589	1.0E-02	10	
10	"	2434	1	1857	577	1.0E-02	10	
10.5	"	2425	1	1857	568	1.0E-02	10	
11	"	2464	1	1857	607	1.1E-02	11	
11.5	"	2328	1	1857	471	8.3E-03	8	
12	"	3637	1	1857	1780	3.1E-02	31	
12.5	"	2548	1	1857	691	1.2E-02	12	
3	"	2539	1	1857	682	1.2E-02	12	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1480	23.1	2786	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	2421	1	1857	564	1.0E-02	10	
14	"	2488	1	1857	631	1.1E-02	11	
14.5	"	2529	1	1857	672	1.2E-02	12	
15	"	2471	1	1857	614	1.1E-02	11	
15.5	"	2490	1	1857	633	1.1E-02	11	
16	"	2506	1	1857	649	1.1E-02	11	
16.5	"	2475	1	1857	618	1.1E-02	11	
17	"	2384	1	1857	527	9.3E-03	9	
17.5	"	2509	1	1857	652	1.2E-02	12	
18	"	2431	1	1857	574	1.0E-02	10	
18.5	"	2349	1	1857	492	8.7E-03	9	
19	"	2481	1	1857	624	1.1E-02	11	
19.5	"	2365	1	1857	508	9.0E-03	9	
20	"	2399	1	1857	542	9.6E-03	10	
20.5	"	2218	1	1857	361	6.4E-03	6	
21	"	2382	1	1857	525	9.3E-03	9	
21.5	"	2335	1	1857	478	8.5E-03	8	
22	"	2351	1	1857	494	8.7E-03	9	
22.5	"	2441	1	1857	584	1.0E-02	10	
23	"	2298	1	1857	441	7.8E-03	8	
23.5	"	2373	1	1857	516	9.1E-03	9	
24	"	2244	1	1857	387	6.8E-03	7	
24.5	"	2301	1	1857	444	7.9E-03	8	
25	"	2489	1	1857	632	1.1E-02	11	
25.5	"	2397	1	1857	540	9.6E-03	10	
26	"	2511	1	1857	654	1.2E-02	12	
26.5	"	2384	1	1857	527	9.3E-03	9	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1480	23.1	2786	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2500	1	1857	643	1.1E-02	11	
27.5	"	2549	1	1857	692	1.2E-02	12	
28	"	2375	1	1857	518	9.2E-03	9	
28.5	"	2545	1	1857	688	1.2E-02	12	
29	"	2529	1	1857	672	1.2E-02	12	
29.5	"	2467	1	1857	610	1.1E-02	11	
30	"	2505	1	1857	648	1.1E-02	11	
30.5	"	2498	1	1857	641	1.1E-02	11	
31	"	2480	1	1857	623	1.1E-02	11	
31.5	"	2489	1	1857	632	1.1E-02	11	
32	"	2556	1	1857	699	1.2E-02	12	
32.5	"	2408	1	1857	551	9.7E-03	10	
33	"	2524	1	1857	667	1.2E-02	12	
33.5	"	2569	1	1857	712	1.3E-02	13	
34	"	2552	1	1857	695	1.2E-02	12	
34.5	"	2603	1	1857	746	1.3E-02	13	
35	"	2559	1	1857	702	1.2E-02	12	
35.5	"	2466	1	1857	609	1.1E-02	11	
36	"	2469	1	1857	612	1.1E-02	11	
36.5	"	2475	1	1857	618	1.1E-02	11	
37	"	2542	1	1857	685	1.2E-02	12	
37.5	"	2614	1	1857	757	1.3E-02	13	
38	"	2478	1	1857	621	1.1E-02	11	
38.5	"	2479	1	1857	622	1.1E-02	11	
39	"	2614	1	1857	757	1.3E-02	13	
39.5	"	2512	1	1857	655	1.2E-02	12	
40	"	2493	1	1857	636	1.1E-02	11	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	2482	1	1857	625	1.1E-02	11	
41	"	2527	1	1857	670	1.2E-02	12	
41.5	"	2565	1	1857	708	1.3E-02	13	
42	"	2642	1	1857	785	1.4E-02	14	
42.5	"	2529	1	1857	672	1.2E-02	12	
43	"	2463	1	1857	606	1.1E-02	11	
43.5	"	2613	1	1857	756	1.3E-02	13	
44	"	2610	1	1857	753	1.3E-02	13	
44.5	"	2720	1	1857	863	1.5E-02	15	
45	"	2417	1	1857	560	9.9E-03	10	
45.5	"	2514	1	1857	657	1.2E-02	12	
46	"	2602	1	1857	745	1.3E-02	13	
46.5	"	2473	1	1857	616	1.1E-02	11	
47	"	2541	1	1857	684	1.2E-02	12	
47.5	"	2549	1	1857	692	1.2E-02	12	
48	"	2570	1	1857	713	1.3E-02	13	
48.5	"	2481	1	1857	624	1.1E-02	11	
49	"	2410	1	1857	553	9.8E-03	10	
49.5	"	2563	1	1857	706	1.2E-02	12	
50	"	2639	1	1857	782	1.4E-02	14	
50.5	"	2480	1	1857	623	1.1E-02	11	
51	"	2494	1	1857	637	1.1E-02	11	
51.5	"	2611	1	1857	754	1.3E-02	13	
52	"	2517	1	1857	660	1.2E-02	12	
52.5	"	2535	1	1857	678	1.2E-02	12	
53	"	2615	1	1857	758	1.3E-02	13	
53.5	"	2510	1	1857	653	1.2E-02	12	

New World Technology Radiological Survey Report

Date:	12/19/97	Time:	1320	Surveyor (print):	Dave Davis, Willie Bremer
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.025

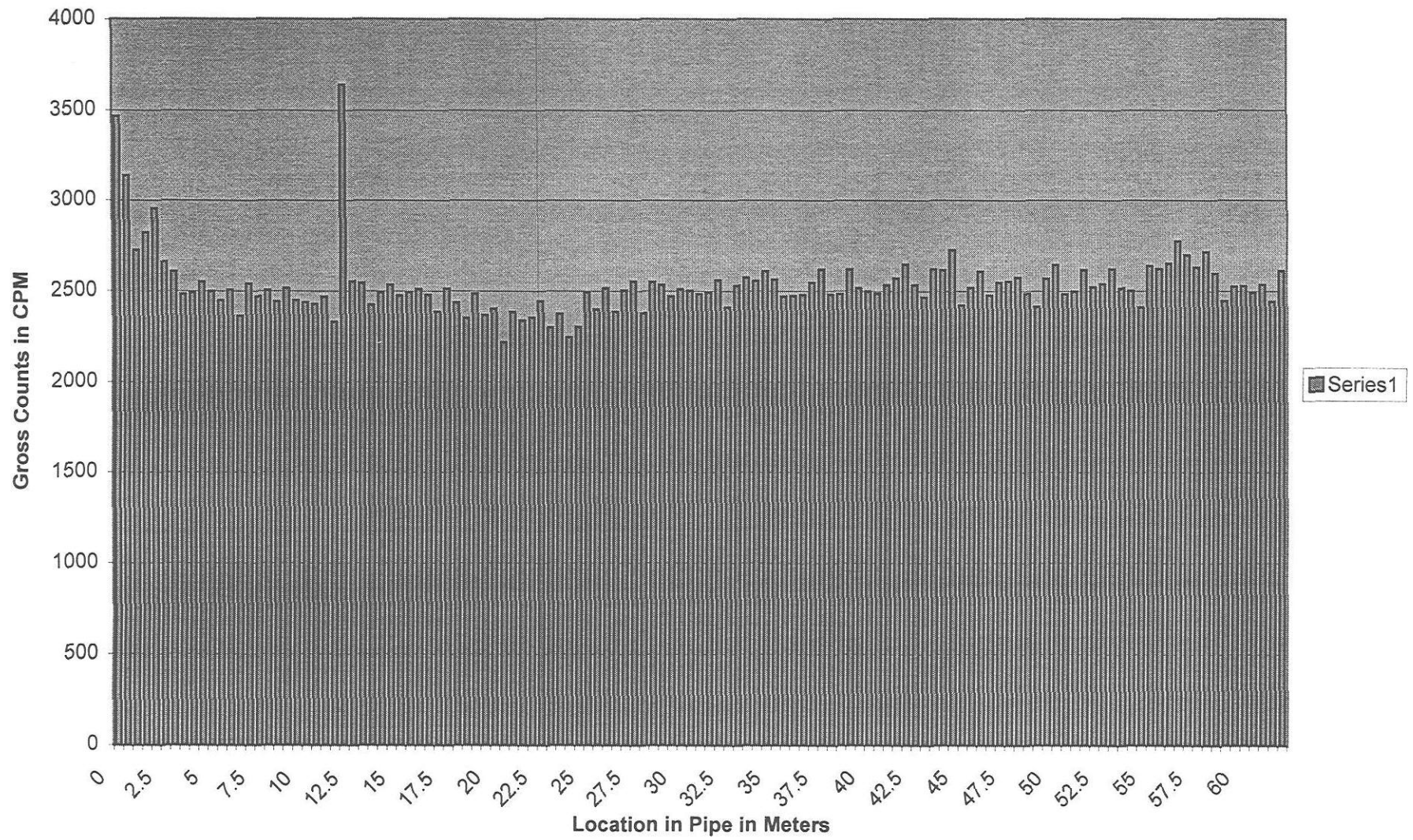
Net counts for L_D : 203 cpm L_D : 3.59 nCi 0.0036 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1480	23.1	2786
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2498	1	1857	641	1.1E-02	11	
54.5	"	2408	1	1857	551	9.7E-03	10	
55	"	2632	1	1857	775	1.4E-02	14	
55.5	"	2617	1	1857	760	1.3E-02	13	
56	"	2646	1	1857	789	1.4E-02	14	
56.5	"	2769	1	1857	912	1.6E-02	16	
57	"	2692	1	1857	835	1.5E-02	15	
57.5	"	2625	1	1857	768	1.4E-02	14	
58	"	2710	1	1857	853	1.5E-02	15	
58.5	"	2593	1	1857	736	1.3E-02	13	
59	"	2442	1	1857	585	1.0E-02	10	
59.5	"	2520	1	1857	663	1.2E-02	12	
60	"	2523	1	1857	666	1.2E-02	12	
60.5	"	2486	1	1857	629	1.1E-02	11	
61	"	2531	1	1857	674	1.2E-02	12	
61.5	"	2438	1	1857	581	1.0E-02	10	
62	"	2606	1	1857	749	1.3E-02	13	

Figure 5F1-5F2-1 Survey Results from Mahnole 5F1 to Manhole 5F2



New World Technology Radiological Survey Report

Date:	12/20/97	Time:	0715	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 CPM L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
62.5	I/S Pipe	2536	1	1857	679	1.2E-02	12	
63	"	2748	1	1857	891	1.6E-02	16	
63.5	"	2824	1	1857	967	1.7E-02	17	
64	"	2972	1	1857	1115	1.9E-02	19	
64.5	"	2710	1	1857	853	1.5E-02	15	
65	"	2624	1	1857	767	1.3E-02	13	
65.5	"	2780	1	1857	923	1.6E-02	16	
66	"	2994	1	1857	1137	2.0E-02	20	
66.5	"	2644	1	1857	787	1.4E-02	14	
67	"	2784	1	1857	927	1.6E-02	16	
67.5	"	2770	1	1857	913	1.6E-02	16	
68	"	2708	1	1857	851	1.5E-02	15	
68.5	"	2589	1	1857	732	1.3E-02	13	
69	"	2552	1	1857	695	1.2E-02	12	
69.5	"	2520	1	1857	663	1.2E-02	12	
70	"	2510	1	1857	653	1.1E-02	11	
70.5	"	2628	1	1857	771	1.3E-02	13	
71	"	2636	1	1857	779	1.4E-02	14	
71.5	"	2706	1	1857	849	1.5E-02	15	
72	"	2721	1	1857	864	1.5E-02	15	
72.5	"	2625	1	1857	768	1.3E-02	13	
73	"	2587	1	1857	730	1.3E-02	13	
73.5	"	2608	1	1857	751	1.3E-02	13	
74	"	2767	1	1857	910	1.6E-02	16	
74.5	"	2849	1	1857	992	1.7E-02	17	
75	"	2426	1	1857	569	9.9E-03	10	
75.5	"	2511	1	1857	654	1.1E-02	11	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	O715	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 CPM L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
76	"	2682	1	1857	825	1.4E-02	14	
76.5	"	2747	1	1857	890	1.6E-02	16	
77	"	2956	1	1857	1099	1.9E-02	19	
77.5	"	2766	1	1857	909	1.6E-02	16	
78	"	2650	1	1857	793	1.4E-02	14	
78.5	"	2681	1	1857	824	1.4E-02	14	
79	"	2764	1	1857	907	1.6E-02	16	
79.5	"	2712	1	1857	855	1.5E-02	15	
80	"	2637	1	1857	780	1.4E-02	14	
80.5	"	2564	1	1857	707	1.2E-02	12	
81	"	2618	1	1857	761	1.3E-02	13	
81.5	"	2489	1	1857	632	1.1E-02	11	
82	"	2492	1	1857	635	1.1E-02	11	
82.5	"	2565	1	1857	708	1.2E-02	12	
83	"	2446	1	1857	589	1.0E-02	10	
83.5	"	2602	1	1857	745	1.3E-02	13	
84	"	2589	1	1857	732	1.3E-02	13	
84.5	"	2576	1	1857	719	1.3E-02	13	
85	"	2524	1	1857	667	1.2E-02	12	
85.5	"	2541	1	1857	684	1.2E-02	12	
86	"	2480	1	1857	623	1.1E-02	11	
86.5	"	2627	1	1857	770	1.3E-02	13	
87	"	2664	1	1857	807	1.4E-02	14	
87.5	"	2754	1	1857	897	1.6E-02	16	
88	"	2763	1	1857	906	1.6E-02	16	
88.5	"	2502	1	1857	645	1.1E-02	11	
89	"	2614	1	1857	757	1.3E-02	13	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	0715	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 CPM

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
89.5	"	2767	1	1857	910	1.6E-02	16	
90	"	2662	1	1857	805	1.4E-02	14	
90.5	"	2648	1	1857	791	1.4E-02	14	
91.5	"	2689	1	1857	832	1.4E-02	14	
92	"	2650	1	1857	793	1.4E-02	14	
92.5	"	2577	1	1857	720	1.3E-02	13	
93	"	2509	1	1857	652	1.1E-02	11	
93.5	"	2630	1	1857	773	1.3E-02	13	
94	"	2418	1	1857	561	9.8E-03	10	
94.5	"	2689	1	1857	832	1.4E-02	14	
95	"	2606	1	1857	749	1.3E-02	13	
95.5	"	2698	1	1857	841	1.5E-02	15	
96	"	2641	1	1857	784	1.4E-02	14	
96.5	"	2793	1	1857	936	1.6E-02	16	
97	"	2597	1	1857	740	1.3E-02	13	
97.5	"	2685	1	1857	828	1.4E-02	14	
98	"	2529	1	1857	672	1.2E-02	12	
98.5	"	2551	1	1857	694	1.2E-02	12	
99	"	2592	1	1857	735	1.3E-02	13	
99.5	"	2801	1	1857	944	1.6E-02	16	
100	"	2712	1	1857	855	1.5E-02	15	
100.5	"	2853	1	1857	996	1.7E-02	17	
101	"	2708	1	1857	851	1.5E-02	15	
101.5	"	2614	1	1857	757	1.3E-02	13	
102	"	2499	1	1857	642	1.1E-02	11	
102.5	"	2732	1	1857	875	1.5E-02	15	
103	"	2809	1	1857	952	1.7E-02	17	

New World Technology Radiological Survey Report

Page 4 of 5

Date:	12/20/97	Time:	0715	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 CPM L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
103.5	"	2652	1	1857	795	1.4E-02	14	
104	"	2713	1	1857	856	1.5E-02	15	
104.5	"	2725	1	1857	868	1.5E-02	15	
105	"	2492	1	1857	635	1.1E-02	11	
105.5	"	2755	1	1857	898	1.6E-02	16	
106	"	2687	1	1857	830	1.4E-02	14	
106.5	"	2848	1	1857	991	1.7E-02	17	
107	"	2616	1	1857	759	1.3E-02	13	
107.5	"	2774	1	1857	917	1.6E-02	16	
108	"	2705	1	1857	848	1.5E-02	15	
108.5	"	2690	1	1857	833	1.5E-02	15	
109	"	2739	1	1857	882	1.5E-02	15	
109.5	"	2684	1	1857	827	1.4E-02	14	
110	"	2713	1	1857	856	1.5E-02	15	
110.5	"	2318	1	1857	461	8.0E-03	8	
111	"	2349	1	1857	492	8.6E-03	9	
111.5	"	2591	1	1857	734	1.3E-02	13	
112	"	2684	1	1857	827	1.4E-02	14	
112.5	"	2559	1	1857	702	1.2E-02	12	
113	"	2723	1	1857	866	1.5E-02	15	
113.5	"	2526	1	1857	669	1.2E-02	12	
114	"	2431	1	1857	574	1.0E-02	10	
114.5	"	2385	1	1857	528	9.2E-03	9	
115	"	2462	1	1857	605	1.1E-02	11	
115.5	"	2428	1	1857	571	9.9E-03	10	
116	"	2408	1	1857	551	9.6E-03	10	
116.5	"	2469	1	1857	612	1.1E-02	11	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	0715	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F1 to Man Hole 5F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

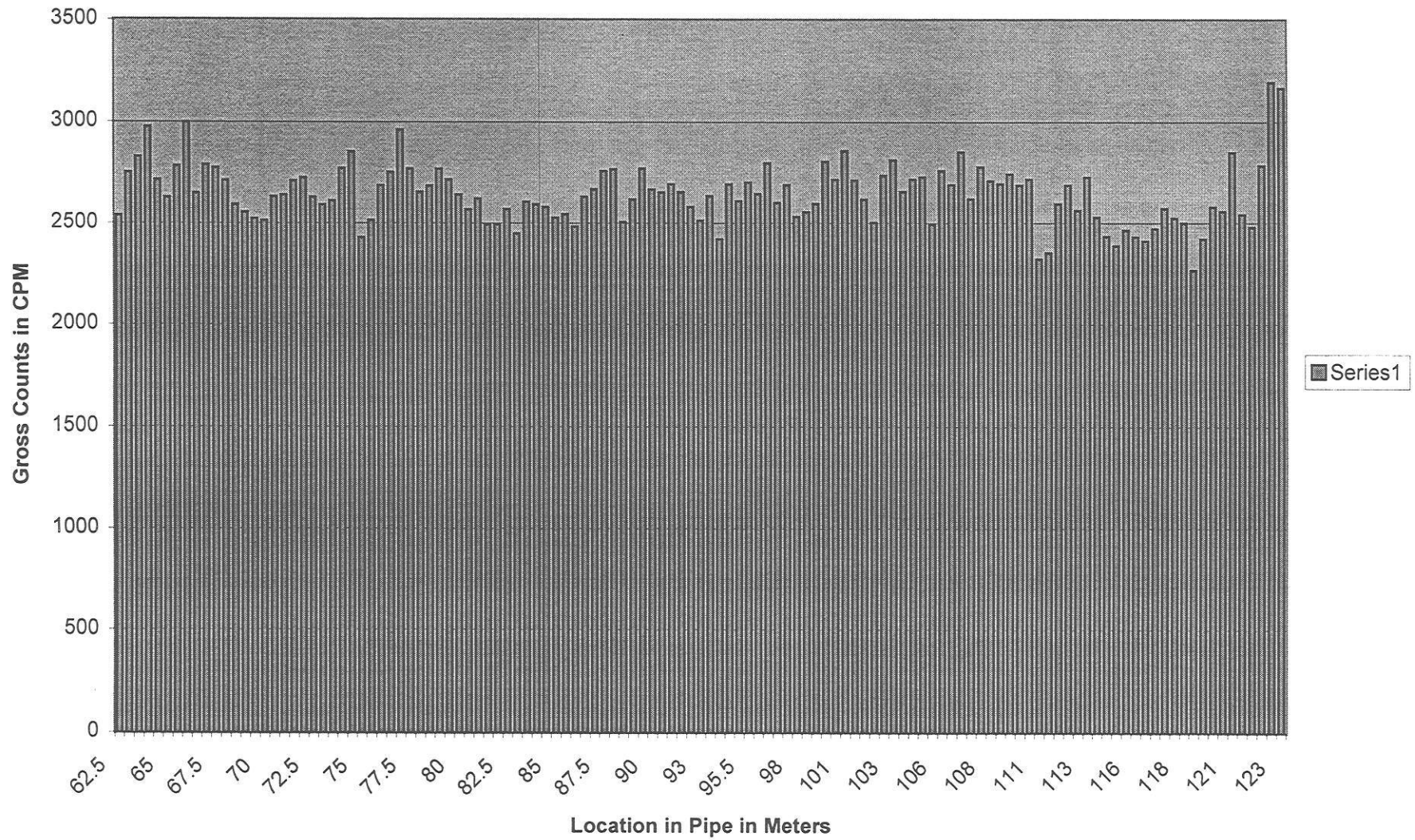
Net counts for L_D : 203 CPM L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
117	"	2568	1	1857	711	1.2E-02	12	
117.5	"	2521	1	1857	664	1.2E-02	12	
118	"	2497	1	1857	640	1.1E-02	11	
118.5	"	2262	1	1857	405	7.1E-03	7	
119	"	2418	1	1857	561	9.8E-03	10	
119.5	"	2576	1	1857	719	1.3E-02	13	
120	"	2554	1	1857	697	1.2E-02	12	
120.5	"	2845	1	1857	988	1.7E-02	17	
121	"	2539	1	1857	682	1.2E-02	12	
121.5	"	2476	1	1857	619	1.1E-02	11	
122	Bottom of M/H	2781	1	3237	-456	0.0E+00	Activity is below LD	
122.5	Inside of M/H	3190	1	3237	-47	0.0E+00	Activity is below LD	
123	"	3163	1	3237	-74	0.0E+00	Activity is below LD	
123.5	"	3589	1	3237	352	6.1E-03	6	
124	"	3665	1	3237	428	7.5E-03	7	
124.5	Plane of M/H	2536	1	3237	-701	0.0E+00	Activity is below LD	

Figure 5F1-5F2-2 Survey Results from Manhole 5F1 to Manhole 5F2



New World Technology Radiological Survey Report

Page 1 of 10

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
0	Plane of M/H	3519	1	3237	282	4.9E-03	5	
0.5	I/S Manhole	3423	1	3237	186	3.2E-03	Activity is below LD	
1	"	3654	1	3237	417	7.3E-03	7	
5	"	3648	1	3237	411	7.2E-03	7	
2	"	3575	1	3237	338	5.9E-03	6	
2.5	I/S Pipe	3047	1	1857	1190	2.1E-02	21	
3	"	2632	1	1857	775	1.4E-02	14	
3.5	"	2513	1	1857	656	1.1E-02	11	
4	"	2412	1	1857	555	9.7E-03	10	
4.5	"	2521	1	1857	664	1.2E-02	12	
5	"	2380	1	1857	523	9.1E-03	9	
5.5	"	2116	1	1857	259	4.5E-03	5	
6	"	2104	1	1857	247	4.3E-03	4	
6.5	"	2455	1	1857	598	1.0E-02	10	
7	"	2503	1	1857	646	1.1E-02	11	
7.5	"	2377	1	1857	520	9.1E-03	9	
8	"	2582	1	1857	725	1.3E-02	13	
8.5	"	2216	1	1857	359	6.3E-03	6	
9	"	2468	1	1857	611	1.1E-02	11	
9.5	"	2199	1	1857	342	6.0E-03	6	
10	"	2375	1	1857	518	9.0E-03	9	
10.5	"	2222	1	1857	365	6.4E-03	6	
11	"	2466	1	1857	609	1.1E-02	11	
11.5	"	2387	1	1857	530	9.2E-03	9	
12	"	2028	1	1857	171	3.0E-03	Activity is below LD	
12.5	"	1893	1	1857	36	6.3E-04	Activity is below LD	
	"	1902	1	1857	45	7.8E-04	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1475	23.1	2801	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
13.5	"	2864	1	1857	1007	1.8E-02	18	
14	"	1937	1	1857	80	1.4E-03	Activity is below LD	
14.5	"	1910	1	1857	53	9.2E-04	Activity is below LD	
15	"	1927	1	1857	70	1.2E-03	Activity is below LD	
15.5	"	2205	1	1857	348	6.1E-03	6	
16	"	2319	1	1857	462	8.0E-03	8	
16.5	"	2304	1	1857	447	7.8E-03	8	
17	"	2388	1	1857	531	9.3E-03	9	
17.5	"	2325	1	1857	468	8.2E-03	8	
18	"	2212	1	1857	355	6.2E-03	6	
18.5	"	2316	1	1857	459	8.0E-03	8	
19	"	2277	1	1857	420	7.3E-03	7	
19.5	"	2512	1	1857	655	1.1E-02	11	
20	"	2334	1	1857	477	8.3E-03	8	
20.5	"	2326	1	1857	469	8.2E-03	8	
21	"	1924	1	1857	67	1.2E-03	Activity is below LD	
21.5	"	1965	1	1857	108	1.9E-03	Activity is below LD	
22	"	1804	1	1857	-53	0.0E+00	Activity is below LD	
22.5	"	1863	1	1857	6	1.0E-04	Activity is below LD	
23	"	2272	1	1857	415	7.2E-03	7	
23.5	"	2307	1	1857	450	7.8E-03	8	
24	"	2089	1	1857	232	4.0E-03	4	
24.5	"	2295	1	1857	438	7.6E-03	8	
25	"	2182	1	1857	325	5.7E-03	6	
25.5	"	1997	1	1857	140	2.4E-03	Activity is below LD	
26	"	1969	1	1857	112	2.0E-03	Activity is below LD	
26.5	"	2005	1	1857	148	2.6E-03	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM	
1475	23.1	2801	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
27	"	2104	1	1857	247	4.3E-03	4	
27.5	"	2023	1	1857	166	2.9E-03	Activity is below LD	
28	"	1834	1	1857	-23	0.0E+00	Activity is below LD	
28.5	"	1686	1	1857	-171	0.0E+00	Activity is below LD	
29	"	1999	1	1857	142	2.5E-03	Activity is below LD	
29.5	"	2001	1	1857	144	2.5E-03	Activity is below LD	
30	"	1968	1	1857	111	1.9E-03	Activity is below LD	
30.5	"	1883	1	1857	26	4.5E-04	Activity is below LD	
31	"	2052	1	1857	195	3.4E-03	Activity is below LD	
31.5	"	2022	1	1857	165	2.9E-03	Activity is below LD	
32	"	2114	1	1857	257	4.5E-03	4	
32.5	"	2213	1	1857	356	6.2E-03	6	
33	"	1987	1	1857	130	2.3E-03	Activity is below LD	
33.5	"	1722	1	1857	-135	0.0E+00	Activity is below LD	
34	"	1964	1	1857	107	1.9E-03	Activity is below LD	
34.5	"	1903	1	1857	46	8.0E-04	Activity is below LD	
35	"	2372	1	1857	515	9.0E-03	9	
35.5	"	2331	1	1857	474	8.3E-03	8	
36	"	2175	1	1857	318	5.5E-03	6	
36.5	"	2367	1	1857	510	8.9E-03	9	
37	"	2460	1	1857	603	1.1E-02	11	
37.5	"	2208	1	1857	351	6.1E-03	6	
38	"	2251	1	1857	394	6.9E-03	7	
38.5	"	2563	1	1857	706	1.2E-02	12	
39	"	2148	1	1857	291	5.1E-03	5	
39.5	"	2324	1	1857	467	8.1E-03	8	
40	"	2301	1	1857	444	7.7E-03	8	

New World Technology Radiological Survey Report

Page 4 of 10

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
40.5	"	2289	1	1857	432	7.5E-03	8	
41	"	2395	1	1857	538	9.4E-03	9	
41.5	"	2223	1	1857	366	6.4E-03	6	
42	"	2184	1	1857	327	5.7E-03	6	
42.5	"	2211	1	1857	354	6.2E-03	6	
43	"	2032	1	1857	175	3.0E-03	Activity is below LD	
43.5	"	1838	1	1857	-19	0.0E+00	Activity is below LD	
44	"	1685	1	1857	-172	0.0E+00	Activity is below LD	
44.5	"	1754	1	1857	-103	0.0E+00	Activity is below LD	
45	"	1882	1	1857	25	4.4E-04	Activity is below LD	
45.5	"	1806	1	1857	-51	0.0E+00	Activity is below LD	
46	"	1973	1	1857	116	2.0E-03	Activity is below LD	
46.5	"	1921	1	1857	64	1.1E-03	Activity is below LD	
47	"	1976	1	1857	119	2.1E-03	Activity is below LD	
47.5	"	1993	1	1857	136	2.4E-03	Activity is below LD	
48	"	2206	1	1857	349	6.1E-03	6	
48.5	"	2232	1	1857	375	6.5E-03	7	
49	"	2059	1	1857	202	3.5E-03	Activity is below LD	
49.5	"	2020	1	1857	163	2.8E-03	Activity is below LD	
50	"	1954	1	1857	97	1.7E-03	Activity is below LD	
50.5	"	2005	1	1857	148	2.6E-03	Activity is below LD	
51	"	2118	1	1857	261	4.5E-03	5	
51.5	"	2057	1	1857	200	3.5E-03	Activity is below LD	
52	"	2345	1	1857	488	8.5E-03	9	
52.5	"	2224	1	1857	367	6.4E-03	6	
53	"	2328	1	1857	471	8.2E-03	8	
53.5	"	2387	1	1857	530	9.2E-03	9	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1475	23.1	2801	
I/S Pipe Background		1857	CPM
I/S M/H Background		3237	CPM

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
54	"	2064	1	1857	207	3.6E-03	4	
54.5	"	2117	1	1857	260	4.5E-03	5	
55	"	2133	1	1857	276	4.8E-03	5	
55.5	"	2272	1	1857	415	7.2E-03	7	
56	"	2327	1	1857	470	8.2E-03	8	
56.5	"	2415	1	1857	558	9.7E-03	10	
57	"	2408	1	1857	551	9.6E-03	10	
57.5	"	2736	1	1857	879	1.5E-02	15	
58	"	2551	1	1857	694	1.2E-02	12	
58.5	"	2170	1	1857	313	5.5E-03	5	
59	"	2125	1	1857	268	4.7E-03	5	
59.5	"	2094	1	1857	237	4.1E-03	4	
60	"	2278	1	1857	421	7.3E-03	7	
60.5	"	2055	1	1857	198	3.4E-03	Activity is below LD	
61	"	2194	1	1857	337	5.9E-03	6	
61.5	"	2450	1	1857	593	1.0E-02	10	
62	"	2311	1	1857	454	7.9E-03	8	
62.5	"	2197	1	1857	340	5.9E-03	6	
63	"	2376	1	1857	519	9.0E-03	9	
63.5	"	2305	1	1857	448	7.8E-03	8	
64	"	2220	1	1857	363	6.3E-03	6	
64.5	"	1961	1	1857	104	1.8E-03	Activity is below LD	
65	"	1674	1	1857	-183	0.0E+00	Activity is below LD	
65.5	"	1883	1	1857	26	4.5E-04	Activity is below LD	
66	"	1776	1	1857	-81	0.0E+00	Activity is below LD	
66.5	"	2075	1	1857	218	3.8E-03	4	
	"	1801	1	1857	-56	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
67.5	"	1914	1	1857	57	9.9E-04	Activity is below LD	
68	"	1874	1	1857	17	3.0E-04	Activity is below LD	
68.5	"	1966	1	1857	109	1.9E-03	Activity is below LD	
69	"	2230	1	1857	373	6.5E-03	6	
69.5	"	2251	1	1857	394	6.9E-03	7	
70	"	2223	1	1857	366	6.4E-03	6	
70.5	"	1987	1	1857	130	2.3E-03	Activity is below LD	
71	"	1855	1	1857	-2	0.0E+00	Activity is below LD	
71.5	"	1966	1	1857	109	1.9E-03	Activity is below LD	
72	"	2080	1	1857	223	3.9E-03	4	
72.5	"	2056	1	1857	199	3.5E-03	Activity is below LD	
73	"	2118	1	1857	261	4.5E-03	5	
73.5	"	2167	1	1857	310	5.4E-03	5	
74	"	2281	1	1857	424	7.4E-03	7	
74.5	"	2362	1	1857	505	8.8E-03	9	
75	"	2088	1	1857	231	4.0E-03	4	
75.5	"	2045	1	1857	188	3.3E-03	Activity is below LD	
76	"	2073	1	1857	216	3.8E-03	4	
76.5	"	2005	1	1857	148	2.6E-03	Activity is below LD	
77	"	2220	1	1857	363	6.3E-03	6	
77.5	"	2301	1	1857	444	7.7E-03	8	
78	"	2515	1	1857	658	1.1E-02	11	
78.5	"	2424	1	1857	567	9.9E-03	10	
79	"	2849	1	1857	992	1.7E-02	17	
79.5	"	2609	1	1857	752	1.3E-02	13	
80	"	2143	1	1857	286	5.0E-03	5	
80.5	"	2034	1	1857	177	3.1E-03	Activity is below LD	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857
I/S M/H Background		3237
		CPM
		CPM

L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
81	"	2122	1	1857	265	4.6E-03	5	
81.5	"	1934	1	1857	77	1.3E-03	Activity is below LD	
82	"	2229	1	1857	372	6.5E-03	6	
82.5	"	2175	1	1857	318	5.5E-03	6	
83	"	2292	1	1857	435	7.6E-03	8	
83.5	"	2014	1	1857	157	2.7E-03	Activity is below LD	
84	"	1933	1	1857	76	1.3E-03	Activity is below LD	
84.5	"	2237	1	1857	380	6.6E-03	7	
85	"	2241	1	1857	384	6.7E-03	7	
85.5	"	1897	1	1857	40	7.0E-04	Activity is below LD	
86	"	1910	1	1857	53	9.2E-04	Activity is below LD	
86.5	"	2025	1	1857	168	2.9E-03	Activity is below LD	
87	"	1818	1	1857	-39	0.0E+00	Activity is below LD	
87.5	"	1864	1	1857	7	1.2E-04	Activity is below LD	
88	"	1850	1	1857	-7	0.0E+00	Activity is below LD	
88.5	"	1953	1	1857	96	1.7E-03	Activity is below LD	
89	"	2026	1	1857	169	2.9E-03	Activity is below LD	
89.5	"	2085	1	1857	228	4.0E-03	4	
90	"	2266	1	1857	409	7.1E-03	7	
90.5	"	2228	1	1857	371	6.5E-03	6	
91	"	2207	1	1857	350	6.1E-03	6	
91.5	"	2420	1	1857	563	9.8E-03	10	
92	"	2224	1	1857	367	6.4E-03	6	
92.5	"	1934	1	1857	77	1.3E-03	Activity is below LD	
93	"	1965	1	1857	108	1.9E-03	Activity is below LD	
93.5	"	2040	1	1857	183	3.2E-03	Activity is below LD	
94	"	2426	1	1857	569	9.9E-03	10	

New World Technology Radiological Survey Report

Page 8 of 10

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
94.5	"	2501	1	1857	644	1.1E-02	11	
95	"	2312	1	1857	455	7.9E-03	8	
95.5	"	2201	1	1857	344	6.0E-03	6	
96	"	2173	1	1857	316	5.5E-03	6	
96.5	"	1916	1	1857	59	1.0E-03	Activity is below LD	
97	"	2066	1	1857	209	3.6E-03	4	
97.5	"	2275	1	1857	418	7.3E-03	7	
98	"	2128	1	1857	271	4.7E-03	5	
98.5	"	1977	1	1857	120	2.1E-03	Activity is below LD	
99	"	1902	1	1857	45	7.8E-04	Activity is below LD	
99.5	"	1964	1	1857	107	1.9E-03	Activity is below LD	
100	"	1973	1	1857	116	2.0E-03	Activity is below LD	
110.5	"	1906	1	1857	49	8.5E-04	Activity is below LD	
111	"	2103	1	1857	246	4.3E-03	4	
111.5	"	2214	1	1857	357	6.2E-03	6	
112	"	2780	1	1857	923	1.6E-02	16	
112.5	"	2857	1	1857	1000	1.7E-02	17	
113	"	2511	1	1857	654	1.1E-02	11	
113.5	"	2614	1	1857	757	1.3E-02	13	
114	"	2300	1	1857	443	7.7E-03	8	
114.5	"	2844	1	1857	987	1.7E-02	17	
115	"	2870	1	1857	1013	1.8E-02	18	
115.5	"	2599	1	1857	742	1.3E-02	13	
116	"	2985	1	1857	1128	2.0E-02	20	
116.5	"	3042	1	1857	1185	2.1E-02	21	
117	"	2959	1	1857	1102	1.9E-02	19	
117.5	"	3236	1	1857	1379	2.4E-02	24	

New World Technology Radiological Survey Report

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

L_D : 3.54 nCi 0.0035 μ Ci

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
118	"	3312	1	1857	1455	2.5E-02	25	
118.5	"	2747	1	1857	890	1.6E-02	16	
119	"	3725	1	1857	1868	3.3E-02	33	
119.5	"	3801	1	1857	1944	3.4E-02	34	
120	"	3474	1	1857	1617	2.8E-02	28	
120.5	"	3732	1	1857	1875	3.3E-02	33	
121	"	3836	1	1857	1979	3.4E-02	34	
121.5	"	3350	1	1857	1493	2.6E-02	26	
122	"	3763	1	1857	1906	3.3E-02	33	
122.5	"	3015	1	1857	1158	2.0E-02	20	
123	"	2867	1	1857	1010	1.8E-02	18	
123.5	"	2592	1	1857	735	1.3E-02	13	
124	"	3308	1	1857	1451	2.5E-02	25	
124.5	"	3512	1	1857	1655	2.9E-02	29	
125	"	3466	1	1857	1609	2.8E-02	28	
125.5	"	3871	1	1857	2014	3.5E-02	35	
126	"	3554	1	1857	1697	3.0E-02	30	
126.5	"	3575	1	1857	1718	3.0E-02	30	
127	"	2680	1	1857	823	1.4E-02	14	
127.5	"	3221	1	1857	1364	2.4E-02	24	
128	"	2830	1	1857	973	1.7E-02	17	
128.5	"	2442	1	1857	585	1.0E-02	10	
129	"	2767	1	1857	910	1.6E-02	16	
129.5	"	2815	1	1857	958	1.7E-02	17	
130	"	3118	1	1857	1261	2.2E-02	22	
130.5	"	2869	1	1857	1012	1.8E-02	18	
1	Bottom of M/H	3211	1	3237	-26	0.0E+00	Activity is below LD	

New World Technology Radiological Survey Report

Page 10 of 10

Date:	12/20/97	Time:	1000	Surveyor (print):	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F2 to Man Hole 5F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Sample Count Time: 1 minutes

Efficiency: 0.026

Net counts for L_D : 203 cpm L_D : 3.54 nCi 0.0035 μ Ci

Bkrd CPM	Source (nCi)	Source CPM
1475	23.1	2801
I/S Pipe Background		1857 CPM
I/S M/H Background		3237 CPM

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μ Ci)	Activity (nCi)	Remarks
131.5	Inside M/H	2843	1	3237	-394	0.0E+00	Activity is below LD	
132	"	4085	1	3237	848	1.5E-02	15	
132.5	"	4297	1	3237	1060	1.8E-02	18	
133	Plane of M/H	4261	1	3237	1024	1.8E-02	18	

Figure 5F2-5F3 Survey Results from Mahnole 5F2 to Manhole 5F3

